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Quetta-Pishin District

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Baluchistan District Gazetteer Series.

VOLUME V.

QUETTA-PISHIN DISTRICT.

TEXT.

BY

R. HUGHES-BULLER, I.C.S.

ASSISTED BY

RAI SAHIB DIWAN JAMIAT RAI, E.A.C.

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PREFACE.

The present volume is the first of the series of District Gazetteers which are now in course of preparation for Baluchistán. As Quetta-Pishín is the most advanced District in the Province, fuller information has been given than will probably be possible with other Districts.

The greater part of the work consists of original matter obtained by the Gazetteer staff. In collecting and arranging it, I have gratefully to acknowledge the great assistance rendered me by Rai Sáhib Díwán Jamiat Rai. His intimate knowledge of the area dealt with, and his unsparing diligence have been most valuable.

My thanks are also due to Major C. Archer, now Revenue Commissioner in Baluchistán, who has kindly given advice and suggestion on the drafts, to Mr. E. Vredenburg of the Geological Survey of India for the article on Geology, and to Major T. E. Marshall, R.A., and Major C. G. Nurse, 113th Infantry, for contributions which have been included in the appendices.

Assistance has been derived from the Settlement Report of the Pishín Tahsíl by Mr. E. G. Colvin, I.C.S., and Khán Bahádur Qázi Jalál-ud-dín, C.I.E., and from the official reports written by Mr. J. A. Crawford, I.C.S., on the Quetta Settlement and on the levy of revenue in Toba Achakzai. A bibliography of other books relating to the District, which have also been found useful, has been given at the end of Chapter IV.

The drafts were examined and passed by Major M. A. Tighe, Political Agent, Quetta-Pishín, and his successor, Captain A. B. Dew.

As it has been found necessary to employ a good many vernacular terms in the section on agriculture, the more important have been collected in two glossaries which have been printed as appendices.

QUETTA,

September, 1905.

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CHAPTER I.

DESCRIPTIVE.

QUETTA-PISHIN occupies a central situation in the highland part of Baluchistán which is directly under British administration, on the western side of the water-shed which separates the basin of the Indus on the east from the area of the inland drainage on the west. It lies between north latitudes 29° 52′ and 31° 18′; and east longitudes 66° 15′ and 67° 48′. Its greatest length, from north to south, is 120 miles and its breadth, from east to west, 64 miles; its total area is 5,127 square miles.

PHYSICAL ASPECTS.

Situation and dimensions.

The District as now constituted for administrative purposes derives its name from two localities, Quetta and Pishín. *Kwatta*, now spelt Quetta, means a fort in Pashtú, and was the name given to the fort within the walls of which the old town was situated. Pishín is a modernised form of Pushang, which is old Persian for the Arabic Fushanj. Myth attributes the origin of the name to a son of the Emperor Afrásiáb. Foshing was the spelling used in the records of the Afghán Government.

Origin of name.

The District is bounded on the north and west by Afghán territory, on the east by the Zhob and Sibi Districts, and on the south by the Bolán Pass District and the Sarawán Division of Kalát.

Boundaries.

The northern and western boundary was demarcated in 1894-95 and 1895-96 by a joint Afghán and British Commission, Major (then Captain) A. H. McMahon, C.I.E., C.S.I., being the British Joint Commissioner, and is fully detailed in agreements* dated the 26th February 1895 and 13th May 1896.

The first portion of the northern boundary, which stretches westward from Domandi, lies in the Zhob District. From pillar No. XXIV (3), 7,140 feet above sea level, the boundary follows the Psein Lora, which, from the junction of the Tokarak river, is known as the Kadanai river, and runs along the centre of the river bed for nearly thirty-nine miles to pillar No. XXV. Here the boundary leaves the river and turns westward. Hence it runs in a straight line to the south bank of the Kadanai river where pillar No. XXVIII has been erected. The line, turning north-westward, now crosses the Kadanai river, and ascends the hills on the north of the river in a straight line up the spur, which forms the western water-shed of the Kalagai nullah, to boundary pillar No. XXIX. Thence the line runs in a straight line to pillar No. XXX, where it turns westwards and runs along the crest of the southern

*Administration *Reports of the Baluchistán Agency*, for 1894-95 and 1896-97.

PHYSICAL ASPECTS.

water-shed of the Kalaka nullah, through boundary pillars Nos. XXXI and XXXII, to pillar No. XXXIII. Beyond pillar No. XXXIII the boundary line leaves the water-shed of the Kalaka nullah, and runs along the crest of the water-shed, crosses the southern Sargash Lúna nullah at pillar No. XXXV, and runs in a straight line to No. XXXVI. From here, again turning westward, the line runs in a straight line to pillar No. XXXVII and thence to pillar No. XXXVIII, which has been erected on a conspicuous peak on the south bank of the Kadanai river, opposite its junction with the Kalaka nullah. The boundary line here turns south-westwards and runs to pillar No. XL on the peak of the Asdobra hills. Then, turning north-westwards, it strikes the south bank of the Kadanai river at pillar No. XLIII. It crosses the Kadanai river, ascends the hills on the north of that river, and runs in a straight line to pillar No. XLVII, on the water-shed between the Tsáh and Minja nullahs on the west and the Tanga nullah on the east, and follows the crest of the water-shed to pillar No. XLIX. Thence, turning northwards, it follows the crest and runs to Manika Súka, a conspicuous peak. From pillar No. LIII the boundary line runs along the crest of the well-defined water-shed between the Khwara, Shishga, and Shahídán nullahs on the south, and the nullahs flowing into the Sinzalah nullah on the north, through pillar No. LIV to pillar No. LV. From here, the boundary line runs along the crest of the southern water-shed of the Loé Mana nullah to the head of the Dori nullahs; it then runs along the crest of the water-shed between two of the three Dori nullahs, i.e., the western and middle of the three Dori nullahs through pillars Nos. LVI, LVII and LVIII to the junction of the western and middle Dori nullahs. It then follows the centre of the river bed of this nullah for a short distance to its junction with the Kadanai river. Crossing the Kadanai river, the boundary line runs in a straight line to pillar No. LIX on the south of the river and to the east of its junction with the Tozana nullah. It then ascends the hills and runs along the crest of the eastern and southern water-shed of the Tozana nullah through pillars Nos. LIX (1), LX, LXI, LXII, LXIII to pillar No. LXIV.

From here the line runs along the southern water-shed of the Wala nullah to pillar No. LXV, which has been erected on a conspicuous peak on the crest of the water-shed of the main range, which is the northern continuation of the Khwája Amrán Range, and which here separates the drainage flowing into the Kadanai river on the west and into Toba on the east. The boundary line, turning southwards, now follows the crest of this main water-shed and runs to pillar No. LXXIII, which stands on the Psha pass. Thence the boundary line runs in a straight line to pillar No. LXXIX which has been erected on a

peak above the upper Shérobo spring.* At this point the line turns west-south-west across the skirts of the mountain to pillar No. LXXXIX which lies half way between the New Chaman Fort and the Lashkar Dhand Afghán post. Between pillars Nos. LXXXIX and XCII, which has been erected at a point half way between the New Chaman railway station and the Mián Boldak hill, the line turns south-west; and from pillar No. XCII to a point north of Ghwazha (pillar No. CXIV A) it runs almost in a straight line south-south-west. At Ghwazha it follows a straight line southwards to pillar No. CXVIII, then turning a little westward to pillars Nos. CXIX-CXX. From here the line turns south, forming a triangle with its apex at pillar No. CXVI, from which point it bends south-eastward in a double curve across the Wuch nullah to pillar No. CXXX, which has been constructed at the point where the Wuch Dara water-shed meets the crest of the main water-shed of the Khwája Amrán Range. The boundary line now turns south-south-west and runs along the main water-shed of the Khwája Amrán Range through pillars Nos. CXXXI to CXXXIV, the last marking the head of the Inzar and Kargu nullahs, which flow into the Shista nullah, and thence to the bed of the Shista nullah (pillars Nos. CXXX to CXXXVII). It thence traverses the southern water-shed of the Inzar nullah until its junction with the Pishín Lora, the centre of which it follows for a short distance to the junction of the Ghaldarra nullah. From here it leaves the Lora and ascends, along the centre of the bed of the middle one of the three main branches of that nullah to a point, pillar No. CXXXVIII, on the crest of the water-shed of the Sarlath Range. Thence it runs in a slightly south-westerly direction for about 22 miles along the crest of the main water-shed of the Sarlath Range to pillar No. CXXXIX. This water-shed is naturally well defined, and it was not, therefore, considered necessary to demarcate with boundary pillars. From boundary pillar No. CXXXIX, which has been erected on a peak of the Sarlath, half way between the head of the Psha and Ushtarlak or Shubarlak passes, the line leaves the crest of the water-shed and runs south-eastwards in a straight line across the upper branches of the Sokhta nullah to pillar No. CXL on a peak of the Yáhya Band Range. Continuing in the same direction pillar No. CXLI is situated on a peak at the head of the Kuchnai Dasht and Khatonaki nullahs, and the line thence runs across the upper branches of the Kurrum nullah to pillar No. CXLII, on a peak at the head of the Inzargai and Zalai nullahs. From here the boundary line runs in a south-westerly direction.

* The rain or subterranean water in the Shérobo nullahs belongs to the Sultanzai Núrzai residents of Shérobo, and it was agreed that no one on the part of the British Government would stop this water from above. Joint agreement, dated the 26th February, 1895.

PHYSICAL ASPECTS.

The southern and eastern boundaries of the District have never been formally delimited, but for administrative purposes a rough line is recognised crossing the Shorarúd valley from the Sarlath Range to the neighbourhood of the Kalán Bárak, and thence along the crest of the Mashélakh Range, and across the head of the Dulai valley to Chiltan. Traversing the latter eastward, it proceeds to the south of the Mián Ghundi by the hillock known as the Bhalla Landao at the foot of which a pillar was erected in the course of the Settlement (1892 to 1896), thence along the northern bank of the Chhalri torrent (*Chhalri-na-jhal*), crossing the railway line under bridge No. 294 (mile $\frac{527}{21}$) about midway between the Sariáb and Spézand railway stations, until it joins the Murdár hill.

Turning north-eastwards the line crosses the Dokán Narai, to which point the Sahtakzai country, in Sarawán, extends from the east, and continues to Zarghún where the Sibi District is met. Continuing north-eastwards over the Brahimán or Kach Kotal, the line meets the southern boundary of the Zhob District and a corner of the Loralai District at Momanrgai Tari, about 14 miles east of Chinjan, and some 20 miles south of Hindubágh, whence it continues in a zigzag course through the Kand mountain to meet the Afghán boundary close to the point where the Tokarak stream joins the Kadanai river.

Configuration.

The general character of the District is mountainous, the mountains being intersected by long, narrow valleys. At the northern end of the District the great plateau of Toba drains northward to the Kadanai in Afghánistán; the drainage of the rest of the country is carried off to the south-west by the Pishín Lora, and it is along the main stream and tributaries of this river that the valleys lie. They are situated between 4,500 and 5,500 feet above sea level and, beginning from the south, include the Quetta and Aghbarg valleys, which form a horse-shoe round the northern end of the Chiltan Range, with the toe jutting forward into the Kuchlák valley. The latter running northward, is joined by the Gwál valley from the north-east and they eventually combine with the fine plain of Pishín. The Pishín plain is the largest of the valleys in the District and is connected on the south-west with Shorarúd which lies along the corner of the same name.

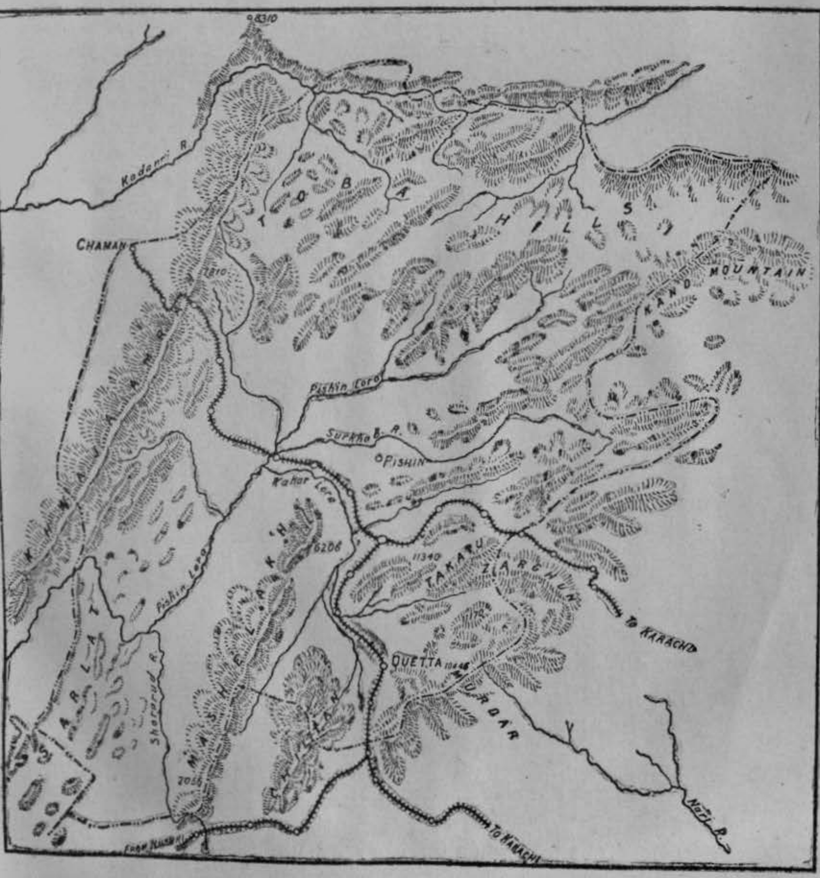
All the valleys exhibit similar features and consist of flat plains of alluvial soil in the centre, with a pebbly slope or *dámán* of varying length rising on either side to the surrounding mountains. It is from these pebbly beds that the supply of water for irrigation is chiefly derived through *kárézes*. These continue into the mountains in the shape of torrent beds which in the lower parts are full of large pebbles and, in the upper reaches, of boulders. The central parts of the main valleys vary in width from about four to twenty miles.

PHYSICAL ASPECTS.

Hill Ranges.

The hill ranges are fairly uniform in character consisting of long central ridges from which frequent spurs descend, being separated from one another by innumerable gorges and torrent beds. They vary in elevation from about 5,000 to 11,700 feet. Here and there high cliffs prevent all traffic, as in the case of the part of the Zarghún between its two highest peaks, but as a rule, like other mountains in Baluchistán they are fairly accessible and present few obstacles to footmen. In most of them water sufficient for small parties is obtainable in frequent pools or springs by those possessing local knowledge. The Toba hills differ from the rest in the fine plains which they possess, the largest being Farákhi and Tabína.

The following map shows the orographical features of the District.



PHYSICAL ASPECTS.

Beginning from the north, the largest mass of mountains is the Toba hills, forming the western end of the Toba-Kákar Range, which stretches along the northern boundary of Quetta-Pishín and Zhob, and tapering off on the south-west into the Khwája Amrán and afterwards into the Sarlath. From the south-west and south, the Mashélakh and the Chiltan Ranges jut forward into the District. The eastern boundary is formed by the Murdár which is connected on the north by low hills with the great mass of the Zarghún; an off-shoot from the latter range, lying immediately north of Quetta, is the Takatu. From the Kand peak of the Toba-Kákar Range the low ranges of Shérghundi and Zhar run forward into the District from the north-east, on either side of the Surkháb river.

Toba hills.

The Toba hills consist of a mass of mountains, which are roughly divided into two parts by a line drawn through Sábúra. Both portions are named after their inhabitants, the smaller, on the east, being known as Toba Kákari and the larger, on the west, as Toba Achakzai. In both, the hills are rugged and barren, but Toba Kákari differs from Toba Achakzai in its possession of more numerous watered glens, in which there are patches of cultivation in terraced fields.

The whole of the plateau of Toba Achakzai has a gradual slope to the north; on the south the water-shed, which has an elevation of about 8,100 feet, descends more abruptly into the Pishín valley. The features of the centre of the range are the plains of Farákhi, Chinár and Tabína, the first in the valley of the Mandanna river and the other two near the head waters of the Táshrobát. They lie at an elevation of about 7,500 feet. East of the Táshrobát valley, a confused mass of low hills intersected by numerous narrow ravines, with occasional patches of cultivation, form the catchment areas of the Hésanna and Takarai. The valley of the Mandanna is separated from the basin of the Táshrobát, Hésanna and Takarai by the Sirki Band hills. The Khwája Amrán, running almost north and south, forms the western escarpment of the plateau.

Toba Kákari and Toba Achakzai are approached from all sides by numerous passes; the principal routes are from Kazha Viála in Barshor to Háji Khán Kila through the Kwat glen and thence by Laghai, and Murgha Fakírzai to Hindubágh in Zhob; from Kazha Viála through the Aghbarg Mánda to Shpána Tilérai and to Kajír in Zhob, a much used track known as the Lamar liár; from Iskán Kila to Sábúra post through Mandozai; from Pishín through the Kratu pass to Mandanna and Farákhi; and from Kila Abdulla through Arambi to Chinár, and from the same place via Spéshlún to Jilga in Tabína. The passes through which routes lead from Toba to Afghán territory are the Shash Káh, Sh...

Dad, Kár, Bésa, Wanaka, Lakrai, and Bésla. Those most used are the Shahídán and Dad, which traverse the Kadanai.

PHYSICAL ASPECTS.

Khwája Amrán.

The Khwája Amrán off-shoot and its continuation, the Sarlath, form the western boundary of the District. The former runs north-north-east and south-south-west towards the plain of Shoráwak in Afghánistán, and from the point where it meets the northern boundary of the District to the Pishín Lora, on the southern side of which it merges in the Sarlath, has a total length of somewhat more than 50 miles, with an elevation, throughout the greater part of its length, of about 8,000 feet, its altitude above the general level of the Pishín valley being about 3,100 feet. It is nowhere more than 10 or 12 miles wide. The scarps on both sides are abrupt as far as the Khojak pass, northward of which only the western one is steep. The feature of the geology is the presence of Khojak shales, reference to which will be found in the article on **Geology**. The highest peak is the Khwája Amrán proper, which rises to a height of 8,864 feet and on which stands the *Ziárat* or shrine of the saint, from whom the range derives its name. It possesses an abundance of pistachio trees, in spite of the denudation caused by the railway works in 1888-90. The Achakzais occupy the country on both sides of it, and possess many orchards, which contain fine grapes and figs and are being rapidly developed.

The principal route from the Chaman Sahará to Toba is by the Boghra pass. The main route from Pishín into the Chaman Sahará and to Rég in Afghánistán is by the Khojak pass, over which there is a cart road and through which the Railway passes to New Chaman; other passes are the Sanzalla, Bághak, Roghánai, Tor Tangai, Karwárai, Abattu, Iskám Kánr, Tánda Darra or Ghwazha, and Wucha Darra. Of these, the paths through Bághak, Karwárai and Abattu are not fit for camels, and the Sanzalla, Roghánai and Tor Tangai are also difficult for these animals.

Khwája Amrán shrine.

The shrine of Khwája Amrán can be reached from Gulistán by Khurgi or Khulgi, 5 miles, Sáya Chaman, 8 miles, and the Shéro garden, 2½ miles. The latter lies at the foot of the peak and a difficult path runs from it to the top, about 1½ miles distant. It was made under the orders of Sardár Muhammad Rafíq Khán, Native Assistant, Chaman, and K. B. Ghulám Haider Khán, Achakzai, and two huts have also been built for the shelter of pilgrims. The shrine consists of an enclosure surrounded by a wall of loose stones and containing a grave covered over with stones, 18 yards long by 10 yards wide; the sepulchre is ornamented with several large poles to which are tied some pieces of cloth. Khwája Amrán is said to have been a Tájik; as a saint, fecundity is his peculiar attribute. The

PHYSICAL ASPECTS.

shrine of his sister, Tangai, is in Rég; she is regarded as the patron saint of camel breeders.

Sarlath.

The Sarlath, which is also called Sarlat is a continuation of Khwája Amrán to the south of the Pishín Lora, separating Shorarúd from Shoráwak. Outside the District the main ridge continues in a south-south-westerly direction to the debouchure of the Kaisár stream near Nushki, but near Iltáz Kárez another branch of the range takes off in a southerly direction skirting the Gurgína valley. On the east, the range consists of a series of low hills which rise to a crest on the west, which is known as Chári Ting or Sáru, 6,330 feet. The eocene shales of the Khwája Amrán form the main range, whilst the syenitic granite of the western Khwája Amrán reappears in a broken, disconnected ridge, cropping up between its western base and the Shoráwak plain. The crest has an average height of some 6,000 feet and borders the District for about 30 miles. The paths leading across the range from Shorarúd to Shoráwak are known as the (1) Lohra, (2) Larwanj, (3) Gandhéri, (4) Ushtarlak, (5) Késad, (6) Toba, (7) Thétli, and (8) Sirkáo or Sirkáb. The Larwanj, Toba and Thétli are only footpaths; the others are fit for laden animals. The first three start from Burj Azíz Khán, the fourth from Muhammad Khél, and the rest from Panjpái in Shorarúd. The Larwanj goes through the defile of the Pishín Lora; Ushtarlak is also locally known as Darra Gul Chopán; and the Késad passes through Darra Loghai. From the crest of the Sarlath a magnificent view is obtained over the whole of Shoráwak and far into the desert beyond. There are no permanent inhabitants but the Sásolis and Pírkánris are to be found grazing their cattle most of the year.

Mashélakh.

The Mashélakh Range, the southern extremity of which is known as the Bárak from the two passes, called the *Kalán* or long and *Khurd* or small Bárak, which cross it, separates the valleys of the Shorarúd and Pishín Lora from those of Dulai and Kahnak in Sarawán on the one hand and of Aghbarg in Quetta-Pishín on the other. From the Kalán Bárak it runs north-north-west for about 50 miles and ends in the Pishín valley at a point south of Yáru Kárez. The mean height is about 7,000 feet, and the highest point 7,972 feet above sea level. The range is quite narrow and is somewhat precipitous on its eastern side, but has a long rolling skirt on the west. The principal passes from north to south are the Ghazaband, through which a cart road goes to Dínár Kárez and Gulistán; the Kudáli, Ghogár pass and Sháho Kushta. The last three are only fit for lightly laden camels. On the western side of the range a good deal of pistachio is to be seen but on the eastern side great denudation of these trees has taken place. The Bázai Kákars occupy the eastern slopes and the whole of the

northern end, and the Mashwánis the western slopes up to Sébat nullah. PHYSICAL ASPECTS.

Chiltan.

The Chiltan Range which lies parallel to the Mashélakh and the Murdár, partly in British and partly in Kalát territory, separates the Dulai and Aghbarg valleys on the west from that of Quetta on the east, and the north-western end of the Quetta tahsíl from the north from the Mastung *niábat* in Sarawán on the south. The highest peak, on which is a shrine visited by Masson and also by Sir Henry R. Green, at one time Political Agent at Kalát, is situated about the centre of the range at an elevation of about 10,480 feet.* The easiest ascent is made from Mehráni in the Dulai valley (about 11 miles from Girdi Taláb) via Bunáb (6 miles) and thence to the top about 3 miles. The view from the top is vast and magnificent; the line of the Bolán pass is seen running towards the plains, and even the lowlands of Kachhi can, it is said, be readily distinguished on a clear day.

The range is some 20 miles long and gradually decreases in height as it runs northward. It is traversed by several paths, among them being a mule track from the Brewery at Kiráni over the Karakhsa hill to Girdi Taláb; a track into Sinjdi, and a third which runs further southward to Kahnak. The Bázai Kákars claim grazing rights in it and the Rustamzais cultivate the little valley of Sinjdi. The Hazár Ganji reserved forest lies on the eastern slopes.

The word Chiltan means "forty bodies," and the Bráhuis relate the following tale about the origin of the name. A man and his wife, having no children repaired to a saint who more than satisfied their requirements by giving them forty. All but one were exposed by the parents on the Chiltan, but when the father, in remorse, visited the hill to inter their bones he found them all living. He attempted to decoy them back by the sight of the fortieth child but the latter was spirited away and the forty babes still rove about the mysterious mountain. Another tale relates that the hill is the residence of forty saints, whence the peculiar sanctity of the shrine.

Murdár.

The Murdár Range is another spur, connected with the main mass of Zarghún, which separates the Quetta valley on the west from the Pingav valley on the east. It ends in a white point (*spé-sunt*) above Spézand railway station whence the station takes its name. Its mean elevation is about 8,000 feet but it rises to 10,446 feet at its highest point, which is almost directly east of Quetta. The latter place lies beneath one of its spurs known as *dré ghárhi*. Since the occupation of Quetta, Murdár has been largely denuded of vegetation and now bears little

*An account of the ascent made by Masson will be found at pages 72 et seq. of Vol. II of *Journeys in Balochistán, Afghánistán, and the Punjab.*

PHYSICAL ASPECTS.

except a small amount of undergrowth. It is connected with Zarghún by a spur known as the Dokán Narai. Another spur is the coal-bearing Sor range.

*Zarghún.

The name of the Zarghún Range is derived from the Pashto word meaning "flourishing." It lies about 15 miles east-north-east of Quetta and forms the apex of the great mass of mountains springing from the Múla pass, which have been described as the Central Bráhui range, and which here spread out eastward and south-eastward on either side of the Harnai valley. The main ridge, which separates Quetta-Pishín from Sibi, stretches in a half circle from west, through north, to south-east; from the centre of this curve another ridge stretches in a south-westerly direction, thus forming three ridges more or less parallel to one another. Between these three high ridges there are two very deep *tangis*, or nullahs with precipitous sides; the one to the south-east is bounded on either side by cliffs 2,000 feet or more high, and practically impassable; the *tangi* to the north-west is not so deep but is just as impracticable, there being only two or three places where it can be crossed, and then only with difficulty by a man who knows the way. There are two principal peaks on the range, the lower being 11,170 feet and the higher 11,738; these peaks are called by the Patháns simply the big peak and the little peak, or in Pashto, *loé sar* and *kuchnai sar*.

The whole hill is formed of conglomerate, which has been cut up by the action of rain etc., into the most extraordinarily deep nullahs, with perpendicular sides, of which the two already mentioned are the chief; the ridge to the north-west is made extremely difficult owing to these nullahs, of which there are a large number running at right angles to the ridge; from north to south, or vice versa, the ridge can be crossed at various places by an active man who knows the tracks; it, however, is quite impossible to move along the ridge from east to west, and only just possible to do so on the south side of the ridge with extreme difficulty.

The Hanna stream, which supplies Quetta with drinking water, rises in the centre of the range; the principal source comes out in the south-east *tangi*, about 2 miles up, gushing out of the rocks on the south of the *tangi* in a stream of some considerable volume; on the north of the range is the source of the Srakhulla stream; the drainage on the east is carried off by numerous streams towards Sángán in the Sibi District. The whole basin of the Hanna stream is closed so as to prevent the water area being polluted. The outer portion of the range is largely preserved as Government forest, the names of the

* The Editor is indebted to Major T. E. Marshall, R.A., for the description of this range.

Forest Ranges being Zarghún North, Zarghún Central, Mazár and Babri. An account of the vegetation of the range will be found in the article on **Botany**. PHYSICAL ASPECTS.

On the rocky heights there are a fair number of the straight-horned variety of *márkhor* (*Capra falconeri*). It is difficult to say with any degree of certainty how numerous these are, as the nature of the range, full as it is of caves, and hidden, inaccessible places render it extremely difficult to observe these wary animals, more especially as by nature they live a life of great seclusion, lying up in some cave by day, and only coming out to feed in the mornings and evenings. The *márkhor* never leaves the tops, even in the heaviest snow when the ground is many feet covered, but takes shelter in some cave and feeds on the tops of the small junipers, where they protrude above the snow.

On all the lower ground there are *gadh* (*Ovis Blandfordii*); these are fairly numerous, but they are great travellers and, owing to the country they live in being thickly covered with juniper forest, it is difficult to observe how many there really are in any given area. They appear, however, to be increasing in numbers. Chikor are numerous everywhere. A footpath goes from Hanna through the Rumai Tangi to Tor Shahr in the Sháhrig tahsíl, which is, however, now little used. On the outer slopes of the range, beyond the forest limits, there is a fair population in the summer months, composed of Patháns who bring up their flocks to graze, both from the Hanna valley, and also from the Khost and Harnai direction.

The Takatu Range at the northern end of the Quetta valley runs north-east and south-west and is really an outlying spur of the great range, of which the Zarghún peak is the highest point. The twin peaks which form its highest points (11,390 and 11,340 feet above sea level) are situated in its centre. It is crossed between Quetta and Kuchlák by the Murghi kotal, and a road, to Fuller's Camp and Kach, runs across the spur which connects it with Zarghún through Srakhulla and the Sarántangi pass. A path also leads from Bostán through the Bostán Darra over the Tambél and Shín Maghzi spurs and through the Gháratta Darra to Sra Ghurgi in the Quetta valley. From the Bostán Darra a supply of water has been piped for the Bostán Railway station. The inhabitants on both sides are Kákars. In rainy years, the range bears plenty of grass and there is also some pistachio and juniper. The Mári Chak (Mara Chigh) reserved forest covers part of the range. Súr Nár is a continuation of the Takatu, in which chromite ore has been found and is being worked. Takatu.

This is a spur (elevation 7,765 feet) of the Kand mountain, and lies in Pishín between the Sarwésht circle on the north and Kárézát-i-Kákari circle on the south. A path passable by Shér Ghundi.

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camels, runs through it by the Súri Naraí kotal between Kárézát-i-Kákari and Sarwésht. It contains pistachio and wild apricot trees and some excellent chikor shooting is to be had in it. The northern part is held by the Taríns and the southern by the Kákars.

RIVERS.

As has been already explained, the drainage of the District is carried off by two rivers, the Kadanai and the Pishín Lora. As compared with that of the Pishín Lora, the catchment area of the Kadanai is insignificant, for it merely drains the Chaman Sub-division and a part of the Toba Kákari circle in Pishín. The basin of the Pishín Lora, not only covers the rest of the District, but also extends through all the western side of the Sarawán country.

Kadanai River.

The Kadanai River is formed by the junction of the Tokarak and Psein Dág streams and receives the name of Kadanai from the point of junction. The first of the two streams mentioned has itself two branches, the Chágai, from the Chágai plain, which lies on the northern side of the watershed at the head of the Barshor, and the Mandanna, which ascends from a point on the south-west at the upper end of the Farákhi plain and drains the whole of Loé Toba. The Dág Lora runs due west from the Psein Dág plateau in the north-western corner of the Zhob District. From the confluence of the Tokarak and Psein Dág, the Kadanai flows nearly due west and, before emerging from the north-west corner of the District into Afghán territory, receives the Táshrobát, which is formed by the junction of the Hésanna and the Gwál from the south-east, the latter draining the Tabína and Chinár plains. After entering Afghán territory the river, after bursting through the northern end of the Khwája Amrán range and traversing the plain north of Chaman, joins the Arghasán at a point some 15 miles south of Kandahár. It runs along the northern border of the District for some 40 miles and is crossed and recrossed at intervals by the boundary line. Its banks commencing with 50 feet in height rise to 150 feet and are in many places precipitous. The breadth varies from 200 yards to half a mile. In the summer there is a thin stream of water in its bed and water often collects in pools. At times it carries heavy floods during which time it is impassable; in April, 1879, a British column was thus delayed for two days.

There is abundance of tamarisk in the bed of the Kadanai and its affluents which afford both fuel and grazing. The water of the main stream is saltish and is said to be injurious to cultivation. It is, however, raised by earthen dams for irrigation by the Khachozai, Mahakzai, Fatéhzai, Safarzai, Malézai and Torzai sections of the Hamídzai Achakzais at various points along its course round and to the east of Loé

Dobandai. The greater part of the irrigated area in the Toba plateau is supplied with water from the Táshrobát and its affluents, principally the Jilga, Hésanna, Gwál and Zémal. It consists of patches lying on the skirts of the hills along the banks of these streams. PHYSICAL ASPECTS.

Pishín Lora.

The term *lora* signifies a torrent as distinguished from a *rod* or perennial river and is applied to many of the streams which join the main or Pishín Lora. Thus there are the Shál or Quetta Lora and the Kákar Lora.

The river rises on the western slopes of the Kand mountain and is formed by the junction of a number of torrents descending from the north and west. The most important from the north is the Zár Buzar Mánda while that from the east, rising near Chingi below the Pinakai Narai, is known as the Adabo Mánda, Spunglúna or Shékhán Kánr. These confluents become known as the Barshor near the little village of Haodakai. Along all the narrow glens, the waters of which contribute to form the Barshor, the hill-sides are studded with villages, orchards and cultivation in terraced fields, and the scenery is most picturesque.

Continuing south-westward the river debouches over a stony bed between low banks into the Pishín plain north of Khushdil Khán, and from this point it has cut for itself a wide channel in the soil of the plain and lies between banks some 20 to 30 feet in height. At Karbala it takes a turn to the south-south-west and in the neighbourhood of Shádízai, and not far from the Saiad Hamíd station, it is joined by the Máchka and its affluents from the north-west and by the Surkháb from the east; a little lower down, the Kákar Lora also enters it from the east and Tirkha Mánda from the north-west, and these, with the Shorarúd which joins it in the hills to the west of Burj Azíz Khán, make up its principal tributaries.

Below Shádízai, the width of the Lora is about 200 yards and the height of its scarped banks 20 feet; the running stream is ordinarily about 30 yards wide and from one to one and a-half feet deep. Owing to the width of the channel, the winter floods never rise very high in this part of the river's course, and seldom last more than 24 hours.

On reaching Burj Azíz Khán, at the southern end of an inlet from the Pishín plain, the river bends in a south-westerly direction and soon enters the hills, within which it winds in a succession of zigzags and with a width of less than 100 yards. The Shorarúd joins it from the south some 7 miles west of Burj, and 16 or 17 miles from the same place is the picturesque Aliábu defile. About this point the river makes an abrupt turn to the north-west and, passing round the northern end of the main ridge of the Sarlath range, crosses the Afghán boundary and runs south-west to the Shoráwak plain. Passing through the

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Shoráwak plain and the northern part of the Nushki tahsíl in the Chágai District, the spill of the river eventually finds its way to the Hámún-i-Lora, after a total course of some 250 miles. The river possesses a number of fords in Pishín which are only difficult after rain when the banks become muddy and slippery.

The water of the main stream is used for purposes of irrigation wherever it can be raised to the surface but in the centre of the valley, this is rendered difficult by the height of the banks. A feeder cut from the Barshor forms the chief source of supply of flood water to the Khushdil Khán Reservoir, and two large schemes have been, recently (1905), attempted, namely Pakúr Khán's Káréz and Saiad Sháh Alam's Káréz, to both of which reference is made in the article on **Irrigation.**

Its tributaries.

Of the main tributaries, the Shorarúd possesses the largest catchment area but only a small part of it lies in the District. Next in importance comes the Kákar Lora, one branch of which is the Quetta Lora, and then the Surkháb and the Máchka.

The Shorarúd.

The stream which comes from beyond Kalát, and is known there as the Shírínáb enters Shorarúd from the south after breaking through the Shaikh Wásil gorge, from which point it is known as the Shorarúd or Tirkha Rúd. The locality takes its name from the river. In the plain, the stream is joined by the Abd-i-khás or Gurgína, a large water course coming from Kardgáp and it also receives the Chaman Singbur, the Kurum and other torrents. Its banks are high and scarped; the water is brackish and is not used for irrigation.

Kákar Lora.

The main stream of the Kákar Lora is formed by the streamlets, which issue from the eastern slopes of the Takatu mountain and its northern extension known as Surghar. Passing through the Gharki defile it flows through the Gwál valley to a point south-west of the Bostán railway station, where it changes its course from west to north-west. Shortly afterwards it is joined by the Quetta Lora to the west of the Yáru Káréz station. The flood water of the Lora above the Khánai station is sometimes brought to the surface for irrigating some lands of that village; the perennial water appears near Manzaki and Sáhib Khán kilá, where it irrigates a small patch of land at Chakul and lower down part of the water is taken off to irrigate the lands of the three Haidarzai villages called Nasozai, Masterzai and Mandan. The Shébo Canal is taken off from it about 2 miles west of Yáru Káréz and about 50 yards below the point where the Tirkha or Tor Wazhai Mánda joins it. The whole of the small perennial flow is thus utilised.

The Quetta Lora.

This stream is known near its source as the Sariáb Lora and rises in the village of that name. It traverses the western side of the Quetta valley through clay banks some 15 feet high and bending north-westward near Baléli continues northward

through the Kuchlák valley where it is met near Kark by the Karanga torrent from the Aghbarg valley and west of Kuchlák by the Hanna stream. PHYSICAL ASPECTS.

Four embankments have been thrown across the bed of the main stream to raise water for irrigation purposes: (1) on the Samungli road about 4 miles from Quetta for the irrigation of Khézi, Samungli and Nau-Hisár villages; (2) at Méhtarzai; (3) by Gurdit Singh's *band* which cost about Rs. 40,000 and which irrigates the Tirkha lands and (4) by a dam at Kark.

Hanna stream.

The Hanna stream rises in the western slopes of the Zarghún Range near Urak, about 14 miles north-east of Quetta and is the source of supply of the piped drinking water system for Quetta. It irrigates lands and orchards in the Hanna glen and also supplies water for irrigation to the villages of Kotwál and Tarín Shahr near Quetta, to the cantonment lands, Chúhi and parts of Baléli. It is joined by the Srakhulla and other torrents and the railway crosses the united streams near Baléli by an iron bridge.

Surkháb stream.

The Surkháb stream is formed of the streamlets which issue from the skirts of the Súrghund peak and the range connecting it with the Kand mountain, and flows westward passing through the Kárézát-i-Kákari circle of Pishín, finally joining the Pishín Lora near Shádízai. Its water is used for irrigation purposes in Nau Bazar, Karbala, Malézai, Haikalzai and Khudádádzai, and is led in an open channel to the Pishín bazar.

Máchka.

The Máchka rises from the southern slopes of the Khwája Amrán and is joined by the Khojak or Madraka Mánda from the north, by the Arambi from the east and by the Sanzalla and Bághak from the west, and joins the Pishín Lora near Saiad Hamíd. It is always dry except after heavy rain.

Scenery.

"Quetta and Pishín," says Mr. Barnes, late Revenue Commissioner in Baluchistán, "have beauties of their own which vary with each season of the year. In the spring, after the winter rains, the whole country, even on the stony slopes of the hills, is tinged with green, and everywhere the ground is studded with wild flowers; red and yellow tulips, similar to those found in the fields round Florence, nestle in the depressions of the lower hills; wild hyacinths and irises of various hues abound among the rocks and stones, the ground in many places is scarlet with the small red poppy, and all around the air is fragrant with the faint aromatic odour of the fresh green southernwood which covers the uncultivated plains. Summer is less gorgeous, but, till the harvest is cut in June, the country round Quetta itself is a sheet of waving corn-fields. July, August, and September are hot, dry, dusty, and depressing, but early in October frosts begin at night, the dust clears out of the sky, and the perpetual sunshine, the dry, keen, invigorating air, the clear distances and the glorious rose-coloured tints of

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the hills at sunset and sunrise are a constant joy to a lover of the beautiful. In winter, the scene again changes, and though the country is arid and drab-coloured, and the leaves are off the trees, still, few places are more beautiful than Quetta on a bright, still, frosty morning, when all the lofty peaks round the valley are capped with glistening snow."*

In Toba, for half the year extreme desolation is the prevailing characteristic. The Achakzais have left the country though here and there their blanket tents are to be found almost hidden for shelter in the little nooks of the ravines. As the spring approaches, grass and herbs spring up in abundance, the small orchards in the ravines put on their foliage, the population reappears and all is cool and pleasant till the autumn.

GEOLOGY.†

Three systems of hills meet in the neighbourhood of Quetta, giving rise to a very complicated geological structure. These are, firstly, a series of ranges striking approximately north and south, extending from Kalát towards Quetta; secondly, another series with strike varying from north-west to west and west-south-west, converging towards the tall Takatu range north of Quetta, and expanding fan-wise in an eastern direction towards the Harnai and Zhob valleys; and lastly a third set of ranges striking approximately north-east and veering through south-south-west to south, which occupies the north-western part of the District and includes the Toba plateau and the Khwája Amrán, Sarlath and Mashélakh ranges. In the case of the Kalát-Quetta system, the thrust which uplifted these ranges has acted in an eastern direction; in the case of the Zhob-Harnai system, the thrust has been towards the south and south-west; in the third system it is principally to the south-east. Where all three systems meet, to the north of Quetta, the resulting confusion is of a most exceptional character, as exemplified especially in the Takatu range where the rocks have been tossed about in such a complicated manner as almost to defy any clear interpretation.

These various mountain systems consist principally of tall barren ridges separated from one another by high-level plains in which villages and towns are situated wherever sufficient water is available for cultivation. The recent or sub-recent accumulations which occupy these plains represent the products of the denudation of the intervening rocky ridges. They consist to a great extent of fine-grained alluvial silt and clay, especially towards the centre of the flat areas. These fine deposits graduate into coarser accumulations towards the margins of the plains, finally passing into those extensive taluses of boulders, so characteristic of arid regions, which

* Quoted from Thornton's *Life of Sir R. Sandeman*, p. 106.
† The Editor is indebted to Mr. E. Vredenburg of the Geological Survey of India for the material used in this section.

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fringe the rocky ridges and constitute the *dámán*, or skirt of the hills. They are of paramount importance in the economy of the District on account of the storage of water within them, which is made available chiefly by the artificial underground channels known as *Kárés*, and to a smaller extent by artesian wells.

There is perhaps no other area in India which exhibits such a variety of geological formations within a relatively small area as the Quetta-Pishín District. The rocks include sedimentary, volcanic and intrusive formations. Leaving aside the sub-recent accumulations of the high-level plains, the sedimentary formations range in age, from upper carboniferous to lower pliocene, almost every intervening period being well represented. It is the Zhob-Harnai set of ranges that exhibits the most complete series, including upper carboniferous, trias, lias, middle jurassic (locally known as the "massive limestone"), neocomian (locally known as "belemnite beds"), upper cretaceous or senonian (including volcanic beds), eocene, chiefly lutetian (locally known as Gházij and Spíntangi, the former containing coal seams), oligocene or lowest miocene (locally known as Nari), and lastly the vast Siwálik formation of which the lower division, consisting principally of grey sandstones, and the middle division, consisting of an enormous accumulation of bright-coloured, gypsiferous clays, are upper miocene, while the massive conglomerates of the upper division are lower pliocene. Great intrusions of upper cretaceous gabbros and chrome-bearing serpentines cut through the triassic strata to the east of Pishín.

The Kalát-Quetta, or north and south system of ranges, contains, within the limits of the District, most of the formations above enumerated with the exception of the carboniferous and trias and the cretaceous intrusions.

The third series of ranges differs both in structure and in composition from the two others. Instead of being made up structurally of comparatively simple synclines and anticlines like the Zhob-Harnai, and Kalát-Quetta systems, its rocks exhibit an extreme degree of compression and disturbance of a very uniform character, represented principally by a series of overthrusts directed towards the south-east and culminating in a great overthrust fault following the south-eastern border of the system, along which eocene beds have been forced over the newer Siwáliks, which dip to the north-west apparently underlying the older beds. This faulted boundary between the Siwáliks and the eocene may be observed at the Ghazaband pass of the Mashélakh Range west of Quetta, and still better all along the hills bordering the northern side of the valley followed by the road, from Pishín to Hindubágh, east of Pishín. The overthrust forms part of one of the most extensive

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structural features on the surface of the globe, being the western continuation of the "Great Boundary Fault," which everywhere follows the southern border of the Himalaya, and along which the older rocks are forced over the Siwálik strata which they seem to overlie.

The rocks constituting the Mashélakh, Sarlath, Khwája Amrán, and Toba plateau belong almost exclusively to a vast formation totally unrepresented in the Kalát-Quetta and the Zhob-Harnai ranges, which is known under the name of Khojak shales from the pass of that name. They correspond in character and in age with part of the flysch of Europe, consisting of an enormous mass of greenish, and more or less slaty, shales, interbedded with numerous *bands* of sandstone weathering black. In the neighbourhood of the great boundary overthrust, the Khojak shales are associated with black nummulitic limestones quite unlike any of the nummulitic rocks which abound in the Kalát-Quetta and Zhob-Harnai ranges. The numerous nummulites contained in this black nummulitic limestone indicate a middle lutetian age intermediate between the lower lutetian "Gh//ázij" and upper lutetian "Spíntangi" of the Kalát-Quetta and Zhob-Harnai ranges. These black nummulitic limestones constitute the backbone of the Mashélakh range and may be observed at the Ghazaband pass where they contain beautiful specimens of nummulites (*N. perforata*, *N. laevigata*, and *Assilina exponens*). It is probable that the entire mass of the Khojak shales is intermediate in age between the Gházij and Spíntangi and was deposited in a relatively short time in a rapidly sinking area.

The western edge of the Sarlath range and Toba plateau is a great fault along which the eastern edge of the great Régistán desert has subsided several thousand feet relatively to the elevated ranges. The numerous earthquakes that originate from this line and the curious rectilinear earthquake fissure observable near Chaman indicate that the faulting probably still continues and has not yet attained a condition of stability. Huge intrusions of upper eocene granites and diorites, such as constitute the Khwája Amrán and neighbouring peaks, indicate that the region has been one of especial disturbance since a remote period.

The Sarlath-Toba system nowhere exhibits the varied sedimentary series that lends so much variety and interest to the Kalát-Quetta and Zhob-Harnai ranges.

Amongst these varied stratified formations, by far the most conspicuous is the massive limestone of middle jurassic age which attains a thickness of several thousand feet, and constitutes the main portion of the lofty ranges which enclose the Quetta plain and are known under the names of Takatu to the north, Murdár to the east, and Chiltan to the south-west.

This massive limestone is overlaid by some variegated beds of neocomian age which have been distinguished by the Geological Survey under the name of "belemnite beds," from the great abundance of this fossil. They are very noticeable in the "Brewery hill" at the northern end of the Chiltan range, west of Quetta, giving it a peculiarly striped appearance, which is further enhanced by the dark *band* of upper cretaceous volcanic ashes which overlies the pink and grey strata.

In the neighbourhood of Kach near the Sind-Pishín Railway, upper cretaceous volcanic beds develop into a great mass of basaltic agglomerates. These volcanic formations, as well as the gabbros and chrome-bearing serpentines of the same neighbourhood, belong to the period of volcanic activity so largely represented in peninsular India by the Deccan Trap.

In other parts of Baluchistán, where the strata are less confused than in the Quetta-Pishín neighbourhood, the upper cretaceous is almost everywhere overlaid by the middle eocene "Gházij" (lower lutetian) and this in its turn by the "Spíntangi" (upper lutetian), but in the region at present dealt with, this succession is seldom clearly observed. For instance, in the "Brewery hill," the beds which apparently overlie the cretaceous volcanic beds, instead of belonging to the tertiary formation, consist of alternating shales and crinoidal limestones of liassic age carried into this abnormal position by an overthrust. Nevertheless, the Gh//ázij, with its clays and its coal-seams, and the Spíntangi, a white nummulitic limestone, form a fairly continuous outcrop, though usually in a very crushed condition, between Takatu and the great Siwálik mountain known as Zarghún, and also between the latter and Murdár.

The Spíntangi limestone also occurs in a far less disturbed condition resting unconformably upon triassic shales and limestones north of the road from Pishín to Ziárat near Kas (Ver: Kazh) and Mallazai.

Wedged in between the eastward thrusts of the Quetta ranges and the south-western thrusts of the Harnai ones, rises the gigantic mass of Zarghún consisting entirely of Siwálik beds. Its highest peaks, which reach a greater altitude than any other mountains in the Quetta neighbourhood, consist entirely of upper Siwálik conglomerates, and represent the greatest height to which pliocene strata have been upheaved in India, perhaps anywhere in the globe.

The middle Siwáliks are most typically developed in the neighbourhood of Pishín where they have breached through, and overwhelmed, as it were, the flysch ranges, a feature connected, no doubt, with the exceptionally disturbed condition of this area as it is close to the junction of the three conflicting sets of ranges.

Details of the older surveys of this region by Messrs.

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Griesbach, Blanford, and Oldham have been published by the Geological Survey department of India in *Memoirs* Vol. XVIII, part I, Vol. XX part II, and *Records* Vol. XXV, part I.

The results of the later surveys by Oldham, Smith, Noetling and Vredenburgh have not yet been published, with the exception of a detailed map on the scale of 16 miles to the inch including most of the Quetta-Pishín district.*

BOTANY. Flora of the Quetta valley.

The following account of the botany of the District is extracted from an account of the *Vegetation of British Baluchistán* written by Mr. J. H. Lace, assisted by Mr. W. Botting Hemsley.†

Except at the foot of the Chiltan range, where there is a good number of pistachio-trees, the hills surrounding the Quetta valley have been denuded of the only trees (juniper and pistachio) to supply Quetta with firewood, and for the greater part of the year have an extremely barren appearance. In the spring, however, these hills are fairly covered with herbaceous plants belonging to the orders Cruciferae, Leguminosae, Compositae, Boragineae, and Liliaceae.

Throughout the valley, near all villages, are numerous orchards, the most valuable of which are surrounded by high mud walls, and have a belt of *Populus alba* or mulberry-trees planted on the inside to protect the apricot, almond, peach, pear, and apple trees from the wind. In these orchards the pomegranate and figs are often grown as underwood, so to speak, and vines are either grown in deep trenches or allowed to climb over the mulberry trees. The large-leaved mulberry cultivated in Europe is often grafted on stocks of *Morus alba*. *Elaeagnus angustifolia*, called locally *sinjit*, is often raised from cuttings Its fruit has a woolly, insipid taste, but is nevertheless appreciated by the people, and in the autumn the leaves of this tree are given to sheep and goats. *Salix acmophylla* is often grown on the banks of water-channels, and is frequently used to form barriers in the beds of streams, so as to regulate their courses and prevent erosion of the banks.

The climate of the Quetta and Pishín valleys is eminently suited to fruit growing. * * * Grapes and peaches are the best fruits grown by the people. Excellent peaches, apples, pears, and plums have been produced during the last twenty years, from English grafts, and a number of fruit trees, grafted in Kandahár, have been imported into Quetta and Pishín.

Since the British occupation, much has been done in planting avenues of various species of *Populus* and *Salix;* also *Platanus orientalis*, along the roads, slips of which plants were originally obtained from Kandahár by Mr. (now the Hon'ble Sir

* *Rec. Geol. Survey of India*, Vol. XXXI., Part 4, Pl. XVIII.

† Linnean Society's *Journal of Botany*, Vol. XXVIII.

Hugh) Barnes, late Political Agent of Quetta and Pishín. *Populus alba* has done very well, and it may be worth mentioning that, although many of the trees are now of considerable size and some produce male catkins, the majority are apparently female trees.

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Ranunculus falcatus is one of the first small plants to appear in the spring, and, with *Poa bulbosa*, often covers the greater part of the ground in orchards during March. *Iris Stocksii* on the hills, and *I. Sisyrinchium*, *Ixiolirion montanum*, and *Hyacinthus glaucus* in the fields, with *Muscari racemosum* near the irrigation-channels, are very abundant. *Tulipa chrysantha* is abundant everywhere, though when growing in cultivated ground it has larger flowers of a pure yellow colour. In deep soil *Bongardia rauwolfii* is one of the most common early plants, and occurs elsewhere up to 7,000 feet.

Eremurus persicus, having white flowers, salmon-coloured on the outside, covers large tracts of stony ground, growing 2 to 4 feet high, and is usually associated with *E. aurantiacus*, whose young leaves are eaten by the Patháns as a vegetable, and whose flowering-stalks sometimes attain 6 feet in height.

One of the most striking plants in the spring is *Sophora Griffithii*, its bright yellow flowers appearing before the leaves, although higher up, at 8,000 feet the flowers and leaves often appear together. On the lower slopes of the hills *Convolvulus leiocalycinus*, a stiff, spinous shrub, 2 feet high, with pure white flowers, is conspicuous and is characteristic of the more stony ground. Many *Astragali* are represented, the majority being small plants with purple or yellow flowers. Later on in the year *Sophora alopecuroides* covers large areas wherever the soil is deep, and is very common in the fields. *Orthonnopsis intermedia*, a woody gregarious shrub, of the Compositae, 2 feet high, is also very characteristic of the Quetta valley, though it extends up to 9,000 feet. Its native name is *Gungu*,* and it is said to be very poisonous to camels, and is used medicinally by the people; also a kind of tinder is made from its ash with cotton. Two species of *Artemisia* are exceedingly abundant in late summer.

In the swampy grass-lands called "chamans," *Ononis hircina*, a small, erect, spiny undershrub with purple flowers, *Ranunculus aquatilis*, var. *trichophyllus*, *Lotus corniculatus*, *Lepidium crassifolium*, *Plantago major*, *Calamagrostis lanceolata*, *Phragmites communis*, and *Eragrostis cynosuroides* are the most common plants.

In cultivated lands the following weeds are generally present:—

Adonis aestivalis (of stouter habit and larger flowers than

* *Gungu* is the Pashtú name; it is *manguli* in Bráhui.—ED.

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the Indian type); *Hypecoum procumbens; Fumaria parviflora; Malcolmia africana* (a very variable plant); *Sisymbrium Sophia; Lepidium draba; Euclidium syriacum; Goldbachia lævigata; Chorispora tenella; Saponaria vaccaria; Silene conoidea; Holosteum umbellatum; Malva rotundifolia; Erodium cicutarium; Galium tricorne; Lithospermum tenuiflorum; Veronica agrestis*; and *Orobanche indica.* Along the banks of irrigation channels *Hyoscyamus reticulatus, Centaurea iberica, Cichorium intybus,* and *Alopecurus pratensis* are very frequent, and occasionally *Xanthium strumarium.* Growing in running water is a variety of *Veronica anagallis.* In corn-fields *Centaurea depressa* and *C. Picris* are often found. *Halocharis violacea,* a curious diffuse prostrate plant with minute reddish-purple flowers, occurs occasionally; and on the banks of the Lora, *Camphorosma monspeliaca,* though the latter is not so abundant as in certain parts of the Pishín valley.

In the *kárézes,* or underground channels by which water is brought from the foot of the hills to the cultivation below, and by which means the greater part of the irrigation is carried out, *Asplenium capillus-veneris* grows most luxuriantly.

Botany of the Kákar-Lora valley.

This is situated to the north-west of the Quetta valley.

Most of the species found about Quetta extend to the Kákar-Lora* valley, but there are some changes in the vegetation; for instance, the two species of Sophora become less and less frequent towards the north, until they cease altogether at Pishín.

This valley is chiefly covered with *Artemisia* and *Alhagi camelorum,* the latter the well-known camel fodder, which is cut and collected by the Patháns in this and the Pishín valley during the autumn. The thorny brushwood is collected into heaps and beaten into small pieces winnowed slightly, and stored for winter use. Towards Gwál, between 5,500 and 6,000 feet, *Ephedra pachyclada* covers a good many acres though, owing to being constantly browsed by herds of sheep and goats, it is only occasionally more than a few inches high. It is curious that this species does not extend either to Quetta or Pishín.

Between Ulgai and Gwál, the stony ground at the base of the hills, and the hills between Gwál and the Surkháb valley, are dotted with trees of *Pistacia mutica,* var. *cabulica*; but this tract is chiefly remarkable for the presence of *Stocksia brahuica,* a stiff spinous shrub, 6 to 12 feet high, with scanty foliage and yellow flowers produced in April to May, usually before the leaves appear. Its fruit, like a brownish grey pea, is enclosed in an inflated bag of a brilliant yellowish-red colour. This locally appears to be the southern limit of this shrub. Another

* Also called the Gwál valley.—ED.

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characteristic plant of this region is *Ebenus stellata*. *Prunus eburnea* also occurs, and *Delphinium Persicum*, *Onobrychis dealbata*, *Crucianella glomerata*, *Campanula griffithii*, a species of *Acantholimon*, *Paracaryum asperum*, *Onosma stenosiphon*, *Convolvulus leiocalycinus*, *Salvia spinosa*, and *Euphorbia densa* are amongst the most common plants. In the beds of dry water-courses *Microrhynchus spinosus*, a leafless spiny member of the Compositae, is very characteristic of poor sandy soil.

Botany. Flora of the Pishín valley.

Many of the plains of the Pishín valley are covered for miles with bushes of *Artemisia* and *Haloxylon griffithii*, the root-stocks of which constitute the chief fuel of certain villages in the winter, and their twiggy, leafless branches seem all that the flocks of sheep and goats have to feed upon during that season. The smoke from the wood of the *Artemisia* is said to be very injurious to the eyes, but the wood of *Haloxylon griffithii*, is rather prized by blacksmiths for making charcoal.

In the western part of the valley there are several thousand acres covered with a variety of *Tamarix gallica*, which is usually cut down by the people every second or third year for fuel or for making mats used in roofing houses; yet if left to grow, this species becomes a fair-sized tree, 20 to 30 feet high, with a trunk over 7 feet in girth. Examples of such trees can be seen on the north side of the valley, where there are some sacred groves. This tamarisk often flowers twice in the year, once in March and April before the leaves appear, and again in September and October. In these jungles very few plants are found; the most striking being a large *Orobanche* with purple flowers, which appears as a parasite on the roots of the tamarisk. *Camphorosma monspeliaca* is occasionally abundant in saline soil amongst the tamarisk bushes, and *Cousinia tenella* is common beneath them, while *Asparagus monophyllus* occurs as a climber.

In saline soil, very frequent towards the west, *Atriplex leptoclada*, *Suaeadae*, *Salsola lanata*, *S. Verrucosa*, and *Halocharis sulphurea* grow luxuriantly.

During March and April the ground is carpeted with flowers; *Papaver cornigerum*, with bright scarlet flowers, and the daisy-like heads of *Matricaria lasiocarpa* are the most abundant and conspicuous. The order of *Cruciferae* is largely represented, most of them small, unimportant looking plants, but which no doubt account in a great degree for the excellent condition of the sheep. Of the *Cruciferae*, *Malcolmia bungei* and *Cheiranthus Stocksianus* are the most striking though both are rather local in sandy soil; several species of *Alyssum* and *Isatis minima* are abundant, and sheep and goats seem very fond of the last, also of *Cheiranthus Stocksianus*.

A very minute form of *Ranunculus falcatus*, often barely half an inch high, is extremely plentiful early in the spring

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usually under *Artemisia* and other small bushes. There are many species of *Astragalus*, of which the most noteworthy are *A. kuganus*, *A. kahiricus*, and *A. hyrcanus;* and *Onobrychis tavernieræfolia*, whose seed pod remains adherent to the root after germination, is common in sandy soil. *Eremostachys thyrsiflora*, a handsome plant, 1 to 2 feet high, is common on gravelly soil, and *Arnebia linearifolia* is abundant everywhere.

Carex physodes forms a turf in many places, and is much grazed by sheep and goats when it first shoots up. In the fruiting stage this sedge is very conspicuous owing to its large brown-coloured inflated utricles. *Eremurus Persicus* covers large areas in the low hills between Bostán and Yáru Kárez, also at Pishín; *E. velutinus*, a species that does not occur in the Quetta valley, being also locally abundant at the latter place. *Iris falcifolia*, with smoky-purple flowers, is common about Yáru Kárez; and another Iris, with very long flower stalks growing in dense clumps with coir-like fibres surrounding the root-stocks, is very abundant in sandy soil at Pishín. *Tulipa montana*, having extremely handsome deep red flowers, is most conspicuous on certain hills up to 6,500 feet, and so is the small *Fritillaria karslinii*. *Orthonnopsis intermedia* occurs gregariously, and *Calligonum polygonoides* is common, while in the driest ravines are often seen straggling bushes of *Lycium barbarum*, called by the natives "Karghanna," the name they also give to *Stocksia Brahuica*, the latter only occurring under the hills at the south-east corner of the valley. *Zygophyllum atriplicoides*, a shrub with green-winged fruits, is found in a few places, and is most abundant in stony ravines about Kach at 6,500 feet. *A. Cousinia* (= Stocks 930, and Griffith 3,323) is another of the gregarious plants characteristic of the east end of the valley; *C. bipinnata* is generally abundant, and its leaves are considered excellent fodder for horses.

In the Surkháb valley, a few miles due east of Pishín, a variety of *Clematis orientalis* grows on the tamarisk bushes. The flowers are generally solitary, with long slender axillary-jointed peduncles, which sometimes produce a lateral flower; and the leaves are often pinnately decompound, with narrow linear segments, occasionally toothed.

Most of the grasses in the valley are annuals, and several species of *Bromus*, *Poa*, and *Hordeum* are abundant; while *Cynodon dactylon* only occurs on the banks of irrigation channels, near water or on cultivated land.

Botany of the Khwája Amrán.

The Khwája Amrán range lies on the west side of the Pishín valley. It is composed chiefly of shales, and is dotted with trees of *Pistacia mutica*, var. *Cabulica*, which are chiefly abundant in the stony beds of the numerous ravines. *Tulipa*

montana, T. chrysantha, and *Iris ensata* are the most striking plants on these hills; and *Draba hystrix*, a species that has not been found elsewhere, occurs in small clumps. A species of *Lonicera* was found near the top of the Khojak pass, but no specimens were obtained in flower or fruit; bushes of *Prunus eburnea*, *Caragana* and *Cotoneaster* are common, and beneath them are found *Delphinium uncinatum* and *Anemone biflora*. *Thalictrum minus* is usually found here and on other ranges in deep soil between rocks and in the shade of bushes from 6,000–9,000 feet. *Leptaleum hamatum*, a new species, is a common herb on soil formed of the disintegrated shales. PHYSICAL ASPECTS.

The vegetation on the Zarghún is very similar to that about Ziárat at the same altitudes, but in the gorge at the head of the Hanna valley, 15 miles N. E. of Quetta, an interesting new thorn, *Cratægus wattiana*, was found. This is a very uncommon tree, 15 feet in height, which was only occasionally seen on the conglomerate formation of the Zarghún range. At 9,000 feet on the same range *Tulipa biebersteiniana* occurs in the shade of bushes. A very handsome striking plant, abundant on the lower slopes and about Kach, is *Salvia hydrangea*; its magenta-coloured flowers are used medicinally by the Patháns.

Vegetation of the Juniper tracts.

The most important and abundant species around Ziárat is *Juniperus macropoda*, named "*obusht*" by the Pathán and "*apurs*" by the Baluch. It forms forests of considerable extent, and is usually pure, being rarely mixed with *Pistacia mutica*, var. *Cabulica*, or with *Fraxinus xanthoxyloides*, and only occasionally attains tree size, owing to the unmerciful way in which its branches are lopped for feeding sheep and goats; *Celtis Caucasica*, is in the same category. The shrubs are numerous, and of these *Prunus eburnea* is perhaps the most abundant, forming thickets on stony ground between the ranges up to 9,000 feet; the fruit ripens yellow like an apricot, bursts open longitudinally, and soon afterwards the seed falls to the ground. *Lonicera quinquelocularis* grows to a considerable size, 18 to 20 feet, in favourable localities; and *L. hypoleuca*, *Abelia triflora*, *Daphne oleoides* (poisonous to camels), *Ephedra nebrodensis (?)*, *Caragana ambigua*, *Berberis vulgaris* and *B. lycium* (usually near water), *Spiraea Brahuica* on the rocks, *Rosa beggeriana*, *Cotoneaster nummularia* (sometimes with shining, and at other times with tomentose leaves), *Ribes orientale* (occurring up to 11,000 feet), *Buddleia paniculata*, *Salvia Cabulica* and *Berchemia lineata* (characteristic of the limestone rocks) are usually common, and to a lesser extent *Jasminum humile*, *Ficus Carica*, *Rhamnus Persicus* (whose bark yields a red dye), *Sageretia Brandrethiana*, and *Prunus microcarpa (?)*; *Jasminum pubigerum* and *Viburnum cotinifolium* are both [illegible]

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are *Sophora griffithii*, *Plectranthus rugosus*, and *Orthonnopsis intermedia*.

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In many places amongst the juniper tracts small *maidáns* are met with from 9,000 to 10,000 feet, which are covered with hummocks of *Acantholimon Munroanum*, *A. fasciculare* (?), and *Onobrychis cornuta*; and in the midst of these or under the shade of bushes, *Gypsophila lignosa*, a new species, is often found. In other places these small elevated plains are covered with *Cousinia scala*, a biennial, whose leaves in a young state are grazed by sheep and goats.

Perowskia abrotanoides is very abundant, and often forms hedges on the borders of fields at elevations of 8,000 to 9,000 feet. Large bushes of *Clematis asplenifolia* are found locally, growing in the clefts of limestone rocks in gorges.

* * * *

Clematis graveolens is a characteristic climber of these parts of the country.

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Under the shade of the juniper trees *Viola kunawarensis* is abundant, and differs from that species as described in the "Flora of British India" by its white flowers streaked with purple in the centre only; also the altitude at which it is found, 7,000 to 10,000 feet, is much lower than that given as its distribution, viz., 11,000 to 15,000 feet. *Leptorhabdos Benthamiana* (Scrophularineae) is another frequent plant in the shade of trees or rocks, and is considered excellent fodder for sheep and goats. It has a wide range, being found from 3,500 to 10,000 feet.

During the spring many plants belonging to the Liliaceae are found that occur at lower altitude, such as *Eremuri*, *Irides*, *Allia*, *Merendera persica*, &c. *Hibiscus trionum* and *Centaurea picris* are characteristic of cultivated ground.

Grasses.

Many grasses are represented, among which a species of *Agropyrum* (? *A. junceum* var.) called *wízha* by the people, has the reputation of being the best fodder in the country. Next in importance are *Pennisetum orientale* (up to 7,000 feet), *P. flaccidum*, *Stipa capillata* and another species, *Oryzopsis cærulescens*, and *Andropogon bladii*. *Melica jacquemontii* is a frequent grass amongst bushes, and seems to have a poisonous effect on all animals that eat it. The Patháns call it *lawanai butae*. Mr. Lace saw camels seized with a kind of paralysis of the hind quarters after eating this grass; but whether it was caused by the grass itself or by the larvae of some insect that he found very abundant in the roots at certain periods, he was unable to determine; yet as the bad effect on the animals took place very rapidly, it was probably the grass itself.

Of the six ferns found in British Baluchistán, *Asplenium viride* was noticed in Zarghún.

Very rare on the hills about Quetta, but fairly abundant locally on the stony lower slopes of some of the ranges further east is *Vitis Persica*, a stunted gregarious bush, two to three feet high. PHYSICAL ASPECTS.

A list giving the local names of some of the commoner plants in the District will be found in appendix I.

The wild animals of the District are much the same as those found in other parts of the upper highlands of Baluchistán and include the wolf, (*P. *léwa*, Br. *kharma*); the jackal (P. *shighál*, Br. *tola*); the fox (P. *gidar*, Br. *shok*), all of which are common. Hyænas (P. *kozh bal*, Br. *kaftár*) are met with in various places and are fairly numerous in the Ajram Khushkába tract in Pishín, while the leopard (P. *paráng*, Br. *khalégha*) is found occasionally in the Zarghún and Chiltan hills. FAUNA.

The Zarghún reserved forests form a welcome breeding-ground for mountain sheep (male, P. *ghursanae*, Br. *khar;* female, *gad*) and straight-horned *markhor*, and these animals are also found in small numbers in the Khwája Amrán, Takatu and the Toba hills. A few ravine deer (P. *hosai*, Br. *khazm*) are found in parts of Pishín. The Afghán hare (P. *soe*, Br. *muru*) abounds in the Shorarúd valley. The Afghán Mouse-Hare (*Lagomys rufescens*) is frequently to be seen among the rocks at elevations over 5,000 feet. Tortoises are common in the valleys. Ducks are plentiful in the irrigation tanks in Pishín in winter. The birds which afford most sport, however, are chikor and sisi, and large bags of these birds are made in years of good rainfall at many places, but especially in the Surkháb valley. The natives attribute the large coveys of chikor, which sometimes number 30 or 40 birds, to the fact that both the male and the female birds sit in the breeding time, the male obtaining the eggs for his nest by stealing them from the female.

A list of birds found near Quetta compiled by Captain T. E. Marshall, R.A., has been published in Part III, Vol. XIV of the *Bombay Natural History Society's Journal*, and a further list of birds seen at Chaman by Captain T. W. Watson, I.M.S., has been printed in Vol. XV, Part I of the same Journal. The Editor is indebted to Captain Marshall for a memorandum on Ornithology of the District which will be found in appendix II.

The insect fauna has been studied by Major C. J. Nurse, 113th Infantry, and the results of his enquiries, which he has kindly contributed, are also published as appendix III to this volume.

For some years previous to 1905, many of the avenues in Quetta had been infested with a boring beetle, whose larvæ fed first on the bast and sap wood of the tree and subsequently on the wood. The trees worst effected were the white poplar and the Kábul willow, but a large proportion of all the trees

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*P. = Pashtu; Br. = Bráhui.

PHYSICAL ASPECTS.

in the avenues had been attacked. On enquiries being set on foot, it was found that the beetle was *Aeolesthes sartus*, and a full memorandum of instructions was drawn up by Mr. E. P. Stebbing, Forest Entomologist to the Government of India, for the eradication of the pest.* Operations were begun in the winter of 1905.

CLIMATE, TEMPERATURE AND RAINFALL.

Climate.

The climate of the whole District is generally dry and, on the whole, temperate. None of the different parts of the District present any marked variations, but Quetta, owing to its higher elevation, is somewhat cooler than Pishín and Pishín than Chaman. The climatic conditions of Shorarúd resemble those of Pishín.

Seasons.

The seasons are as well marked as in Europe. The year is divided into four seasons, known by the Afgháns as the *psarlae, dobae, manae* and *zhamae* or *zamae* and by the Bráhuis as *hatam, tírma, sohél* and *sélt*. The main characteristics of each season are briefly expressed in the Pashtú proverb: *psarlae mamúr, dobae tanúr, manae ranzúr* and *zamae zarúr*, that is to say: spring is teeming, summer sweltering, autumn sickly, winter needy.

The spring is divided locally into the *sara tsila* and *psarlae* proper. *Sara tsila* means "The reddish forty days" from the red buds which appear on the trees; it commences at the end of February and the end of it is known in some parts of the District as *churmuna*. Rain and snow may generally be expected at this time of year. The spring, which is one of the most delightful times of year in the District, lasts till the beginning of June. The country is covered with grass and the valleys are thick with corn. By the end of it, the green fruit has formed on all the trees and is already well advanced. In Toba the different seasons begin more than a month later than in the rest of the District.

The summer (*dobae*) is divided locally into three parts: *dobae* proper; *ahár* and *wasa*. *Dobae* proper corresponds with the first part of June and *ahár* lasts up to the 20th of July; this season is also known as *bád-i-garm* in parts of Pishín. *Wasa* ends with the early part of September. Chaman, Pishín and Shorarúd are hot at this time of year, but in Quetta the day temperature is moderate and in Toba cool; the nights are always cool. The sun is strong and quickly ripens the many different varieties of fruit. In July and August clouds often gather in the afternoon. They seldom bring rain with them but produce a muggy atmosphere.

The autumn is divided into the *spéra manae*, corresponding with part of September and October, and the *ghwar manae* which lasts till the early part of December. At this time the nights

* *A Note on the Quetta Borer* (*Aeolesthes sartus*) by E. P. Stebbing, F.L.S., F.Z.S., F.E.S., Calcutta: 1905.

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become cold and are sometimes frosty, though by day the sun is still warm. The leaves begin to fall and the trees are bare by December. The autumn migration from Toba begins in October.

Winter, which lasts from about the middle of December to the end of February or beginning of March, begins with a *tora tsila* or black forty days, which lasts till about the 15th of January and is followed by a *spína tsila*, or white forty days. The winter is the rainiest part of the year and is often bitterly cold. The days are cloudy; rain and snow fall; sharp frosts occur; and the wind at times is very bitter, especially if it occurs after a heavy fall of snow.

Rain and snowfall.

Like other parts of Baluchistán the District lies outside the sphere of the monsoon currents and the rainfall is irregular and scanty. In winter, when most rain falls, the District is affected by storms, which originate in the Persian plateau, but their number and character vary largely from year to year.

Recording stations and data.

The stations where rainfall is recorded (1904) are: Quetta, Baléli, Kuchlák, Sariáb, Pishín, Bostán, Yáru Káréz, Saranán, Saiyad Hamíd, Gulistán, Kila Abdulla, Khánai, Fuller's Camp, Chaman, Sanzal and Shélabágh.

Table I in Vol. B. gives the average rainfall for Quetta, Pishín, Gulistán and Chaman. Quetta receives the largest amount, 10·52 inches, Pishín comes next with 8·69 inches, while Chaman and Gulistán each receive a little more than 7 inches. The largest rainfall occurs between October and March. In the spring and summer very little rain falls, Quetta getting only 3·30 inches, Pishín 1·28 inches, and Chaman and Gulistán less than an inch. The heaviest rainfall occurs in January and February. The winter snow seldom lies on the ground for long in Quetta itself but, in the surrounding country and on the hills, especially in Toba, it sometimes lasts for a considerable period. The average number of rainy days, between 1894 and 1899, at the stations already mentioned has been as under:

	April to September.	October to March.	Total.
1. Chaman ...	... 2	16	18
2. Kila Abdulla	... 3	18	21
3. Pishín ...	... 3	16	19
4. Quetta ...	... 5	16	21

The figures below show the average temperature of Chaman and Quetta:

Station.	Height of observatory.	January. Mean.	January. * Diurnal range.	May. Mean.	May. * Diurnal range.	July. Mean.	July. * Diurnal range.	November. Mean.	November. * Diurnal range.
† Chaman	4,311′	43·2	18·1	79·6	27·4	88·8	26·6	57·6	24·5
Quetta	5,502′	40·0	21·8	67·8	31·4	78·7	27·9	48·7	32·7

* Average difference between maximum and minimum temperature of each day.

† The figures for Chaman are for 9 years only, and for Quetta 24 years.

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Chaman, it will be seen, is 10 degrees warmer than Quetta in summer, and 3 degrees in winter. The conditions in Pishín are intermediate between those of Chaman and Quetta.

The heat in the District is nowhere extreme in summer, but low temperatures are frequent in winter, and the thermometer not uncommonly falls below freezing point. Some of the lowest temperatures recorded in Quetta between 1900 and 1905 were 3·3 F. on 24th January, 1900, and 8·8 F. on 23rd January, 1905.

Winds.

The mountainous character of the country affects the direction and force of the winds, which in many places partake largely of the character of draughts, traversing the funnel-like valleys. Records are kept at Quetta and Chaman. During 1904 the weather at Quetta was reported as calm at 8 A.M. on 308 days but only on 12 days at Chaman. For the District generally the readings taken at Chaman are the most reliable and from them it may be inferred that the wind is fairly constant. It gathers force between 10 A.M. and mid-day and hence the hours between 8 and 10 o' clock are frequently the most trying part of the day. It drops towards sunset and at night usually ceases altogether. Its direction varies with the season of the year. In spring and summer it generally blows from the south-west or south-south-west and is called *barvo* by the natives. This lasts from the middle of April to the middle of October. In the autumn and winter it shifts to the south-east, south-south-east and east-south-east, the latter being the most prevalent direction, and is known as *purkho* or *nambi*. In January and March the direction is very variable and it frequently veers to a westerly quarter. At this time a strong wind, blowing off the snow, is terribly cutting and deaths from its effects are not uncommon among the poorer natives. The people consider that a south-west wind in winter, known as *khárání*, is almost sure to bring rain. The violent south-west storms, which occur throughout the spring and summer in Chaman, and carry volumes of sand from the Régistán, render existence extremely unpleasant. Most of the calm days occur in November and December.

Floods.

The only important flood, which has been recorded, occurred in Quetta in August, 1889, when the overflowing of the Habíb nullah caused a large amount of damage to both Municipal and private buildings in the Civil Lines. The buildings known as the Munshi lines were wrecked and the Police Thána and Tahsíl considerably damaged. The water-way was increased in 1890-91 for the prevention of such floods in future.

Earthquakes.

Earthquakes are not uncommon, and sometimes cause much damage. About the close of the year 1888, frequent shocks of earthquake were felt in Quetta, several buildings collapsed, and a good many natives left the town. The earthquake also

had the effect of increasing the supply of water in the Chachézai kárez in Shorarúd.

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A severe earthquake occurred in the Khojak region on December 20, 1892, and was felt over a large area of Baluchistán. Much damage was done to railway buildings, and the railway line between Quetta and Chaman, at a place near the Chaman end of the Khojak tunnel, but outside it, was very curiously damaged, the rails being distorted and the distance between Chaman and Quetta being lessened by no less than 2½ feet. A fissure in the ground was found to run across the railway line at this place and was then traced to a short distance on either side of the line.*

Captain (now Colonel Sir A. H.) McMahon afterwards discovered, whilst demarcating the Baloch-Afghán frontier, that this fissure was part of a well-marked line of depression or indentation in the ground, running from near Murgha Chaman, some 18 miles north of Chaman. It gradually ascended the slopes of the Khwája Amrán range diagonally until it actually cut the crest of the main range near its highest peak. Descending again into the Spínatizha valley, it began again to ascend diagonally the slopes of a continuation of the Khwája Amrán range. Cutting this range in a similar manner, it descended to the Lora river, and, crossing it ran along the whole length of the foot of the Sarlath hills to Nushki. Beyond this point Captain McMahon was unable to follow it. The total length seen was 120 miles. It is a well-defined broad line of deep indentation, in places as clearly defined as a deep railway cutting. Both from the presence of water and from its forming a short cut across mountain spurs, the crack is largely used as a thoroughfare. Aged tribesmen informed Captain McMahon that, during their lifetime, on some three occasions after severe earthquake shocks deep fissures had appeared along this line and that similar accounts had been handed down to them by their fathers. The crack is a continuation of the Great Boundary Fault of the Himálayas. All the rocks on the east appear to be sedimentary while those on the west appear to be igneous.†

Another severe earthquake shock was felt in 1900, causing a spring to appear in the Srághurgi village on the slopes of Takatu, which gave a good supply of water for irrigation for some time but has now decreased. The last severe shock was that of 1902, which caused much injury to the buildings in Pishín, Kila Abdulla and Gulistán.

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Up to the middle of the eighteenth century, when Quetta finally passed into the hands of the Bráhui rulers, it may be

* *Records of the Geological Survey of India*, Vol. XXVI, Part II.

† *Journal of the Royal Geographical Society*, Vol. IX, No. 4.

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said that the history of Quetta-Pishín is identical with the Province of Kandahár.

Pishín in the Avesta.

The earliest mention which we have of Pishín is in the Avestic writings, in which Pishinanha is described as a valley (*vara*) in an elevated part of the country and containing a barren level plain (*dasht*).

Graeco-Bactrian period.

It is probable that Krateros, after he was detached from the main body of Alexander's army in the Indus valley, marched via Quetta, on his way to Persia by the Helmand valley route, and the fact that a Greek statue was found when the present arsenal was being constructed, may indicate that Quetta formed part of the Graeco-Bactrian empire in the two centuries preceding the Christian era.

The early Christian era.

We know little of the history of Quetta-Pishín up to the thirteenth century A.D. It certainly formed part of the kingdom of Amír Sabuktagín and of Mahmúd the Ghaznavid, for we hear of both those monarchs making expeditions so far south as Khuzdár. From them it must have passed to their successors, the Ghorid dynasty of Ghazni.

At the beginning of the thirteenth century, Barshor appears to have been a more prominent place than Pishín itself, and the *Tabaqát-i-Náśiri* describes it as forming part of the kingdom of Sultán Muhammad Khán, Khwárazm Sháh of Khíva, as the fief of one Malik Ikhtiyáruddín Mahmúd.

Meanwhile the Mongol power, under Chingiz Khán, was making itself felt, and a little later, when one Malik Khán of Herát was obliged to retire before the Mongol forces towards Garmsél on his way to Seistán, we are told that a man called Razi-ul-Mulk, on whom he conferred the territory of Barshor, was put to flight by the Ighrak tribe, a section of the Khalj Turks, who appear to have been the inhabitants of the country at that time. After the defeat of Sultán Jalál-ud-dín, Khwárazm Sháh, in 1221 near Ghazni, he passed through Barshor on his way to the Indus, and from that time Kandahár and its dependencies passed into the hands of the Mongols.

The Tímúrids.

During the fourteenth century the Maliks of the Kurat dynasty at Herát held sway in Kandahár, but towards the end of that time, it was taken by Tímúr, and conferred by him upon his grandson, Pír Muhammad. During the first half of the fifteenth century, Kandahár was under the rule of Tímúr's successors Sultán Sháh Rukh and Sultán Abu Saíd Bahádur Khán, and it was, probably, at the beginning of this century that the Taríns, who now hold Pishín, emigrated from their original homes about the Takht-i-Sulaimán and made their way into the District.

The District under Herát.

About 1470, Sultán Husain Mirza of Herát rose to power and he subsequently conferred the territories of Shál, Pushang,

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and Sibi on Amír Shujá-ud-dín Zunnún, the Arghún. Zunnún was the father of Sháh Bég Khán, who, about this time, comes into considerable prominence in connection with the districts lying between Pishín and Bhakkar. The latter succeeded to his father's fiefs, and in 1511 we hear of him moving to Shál in consequence of a hostile movement of Bábar from Kábul. Shál was at this time held by Mír Fázil, the Kokaltásh, and Abdul Ali, the Tarkhán Mughal. From Shál, Sháh Bég made frequent raids against Sibi and the surrounding country. He was eventually ousted from Pishín and Shál in 1517 by Bábar, who subsequently succeeded to the throne of Delhi in 1526 A.D.

Humáyún.

Between 1530 and 1545, the province of Kandahár was in the possession of Mirza Kámrán, the brother of the Emperor Humáyún. It was during this period, in 1543, that Humáyún came to Quetta on his retreat from India. On the approach of his uncle Mirza Askari, who was holding Kandahár on behalf of Kámrán, Humáyún left his son Akbar there, then a child of only a year old, but subsequently destined to raise India to its greatest glory under the Mughal Empire, while he himself escaped via Nushki to Garmsél and Herát. On his return two years later, Kandahár again passed under Humáyún's rule, and it continued under the Mughals till 1559. On Humáyún being acknowledged Emperor, he bestowed the Districts of Shál and Mastung on Lawang Khán, the Baloch, but who Lawang Khán was, history does not relate. The fact, however, is interesting as the earliest indication of interference with Quetta from the south. Soon after Humáyún's death in 1556 A.D., Kandahár and its dependencies were ordered by the Emperor Akbar to be restored to the Safavid kings of Persia, and they remained under Persia until 1595, when they were again acquired by the Mughals. At this time we find from the *Ain-i-Akbari*, that Shál and Pushang were included in the eastern division of the Kandahár Sarkár. The revenue arrangements are fully described and will be found in the section on **Land Revenue.**

Early English travellers.

Not long afterwards, whilst Shál and Pishín were still subject to the Mughals, Messrs. Steel and Crowther arrived at Pishín or Pesinga, as they call it, on the 1st of July 1614, on their way from Ajmér to Ísfahán. Pesinga, they say, contained at that time a small fort and "store of soldiers for securing the way." The captain of the fort exacted half an *abbási* on each camel. From Pishín the travellers crossed the Khwája Amrán by the Khojak pass to Kandahár and their description of these hills and their inhabitants at this period is both interesting and amusing. "These mountaines of Candahar," they write, "are inhabited by a fierce people called Agwáns or Potáns, very strong of body, somewhat whiter than the Indians, great robbers, accustomed to cut off whole Carauans. But, at

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present, partly for fears of the Mogoll, and partly through sweet found by commerce (in venting their graine, sheepe and goates of which they have great store, and buying of coarse linnen and other necessaries) they are become more siuill. Yet if they can take any straggling by themselves or staying behind, they will sell them aboue in the Mountaines, and hoxe them to preuent running away, and put them to grind graine with hand-mills, and other seruile drudgerie."

The Safavids.

In 1622, Kandahár was again brought under the sway of the Safavid dynasty, and, with the exception of a short period from 1638 to 1649, when it was betrayed by the Persian governor, Ali Mardán Khán, to the Mughals, it remained under Persia until the rise of the Ghilzai Dynasty under Mír Wáis in 1709 A.D.

On the Safavid monarch, Sháh Abbás, gaining possession of Kandahár in 1622, he conferred the government of Pishín and its tribal dependencies upon Shér Khán the Tarín. The latter appears to have become semi-independent and, on the death of Sháh Abbás seven years later, refused to submit to the governor, Ali Mardán, who has been previously mentioned. In Shér Khán's absence on a plundering expedition, Ali Mardán Khán attacked Kila Shérán, his fort near Pishín Bazar, with 4,000 horse and captured it. Shér Khán had acquired a large amount of treasure and other valuables in the course of a long period of plundering, the whole of which was confiscated. Hearing of his loss, Shér Khán returned in hot speed, and encountered Ali Mardán Khán near Pishín but was worsted and had to retire to Duki and Chotiáli.

After the loss of the province of Kandahár in 1639, the Emperor Sháh Jahán made great efforts to capture it, and despatched a force of over 104,000 men under Dárá Shakoh to recover it. The prince marched via the Sangar pass and Duki to Pishín, whilst his heavy guns made their way by the Bolán pass. The Persians had meanwhile ravaged Pishín and collected all the grain they could lay hands on. Without making a long stop there, Dárá Shakoh crossed the passes into Kandahár. After a lengthy investment he had to abandon the siege, and return by the way by which he had come, and in passing Pishín he destroyed the fort.

The end of the seventeenth century witnessed the rise of the Bráhui power to prominence, and it is probable that Quetta and Pishín both suffered from the encroachments of the Bráhuis and that Quetta, at any rate, fell into their hands in the time of Mír Ahmad, whose reign lasted 30 years, from about 1666 to 1696.

The Ghilzai power.

The Ghilzai, Mír Wáis, obtained possession of Kandahár from the Persians in 1709, and it is curious that this feat was accomplished in connection with Pishín. The representative of

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Sháh Sultán Husain at Kandahár was at this time Gurghín Khán, a Georgian, and he was supported by a bodyguard of the same race. Mír Wáis, by a well conceived plan, induced the Taríns of Pishín to withhold payment of revenue. Meanwhile, he himself took up a position near Kandahár, and when the Georgian bodyguard, which Gurghín Khán had despatched against the Taríns, was at a sufficient distance, Mír Wáis entered the town with every profession of resentment against the recalcitrant tribe. Lulled into a false security, Gurghín Khán was induced to accept an invitation to a feast prepared by Mír Wáis, and when he and his party had fallen into a drunken sleep, the whole of them were murdered as they lay. Disguising himself in Gurghín Khán's dress, Mír Wáis easily got possession of the city, and disposed of the few Georgians who had remained behind. The six hundred men who had proceeded against the Taríns, were received with a hot fire on their return to Kandahár, but managed to make their way via Girishk to Persia.

Mír Husain, the second son of the founder of the dynasty, succeeded his brother Mahmúd in 1725, and about this time, Bráhui history relates that Pishín had been annexed by Mír Abdulla, after an engagement with the Ghilzais near Kandahár, and that a Raísáni, called Mír Firoz, had been made governor. It appears, however, to have been quickly relost, as in 1733, Sháh Husain, Ghilzai, finding himself obliged to move against the Bráhuis, had to put the dismantled fort of Pishín into a state of defence and garrison it. Moving forward, he crossed the Ghazaband pass and took Quetta which he also garrisoned. He, subsequently, advanced to Mastung where the Bráhuis submitted. Shortly afterwards, Nádir Sháh appeared on the scene, and one Mehráb Sultán, Bábi, was ordered to occupy Pishín and collect the revenue, but he was attacked by the Kákars and Taríns who were driven off.

Quetta, after its capture by Sháh Husain, Ghilzai, appears to have remained under Kandahár, and to have been transferred to Nádir Sháh on his taking that place, and we find that he assigned it for the support of Mír Nasír Khán and his mother, during the time that Mír Muhabbat Khán held Kalát, i.e., from 1730-31 to 1750-51. Later on, it was again resumed, and Ahmad Sháh, Durráni is said to have finally conferred it on the Bráhuis after the campaign in eastern Persia in 1751, when he received such gallant aid from Nasír Khán I. It is in connection with this incident, that the story is told by the Bráhuis that Ahmad Sháh in conferring the district on the mother of Nasír Khán, Bíbi Mariam, said "This is your *shál*," i.e., your present.

The Durráni and Bárakzai period.

Pishín, meanwhile, remained under the Durránis and the system of supplying men-at-arms, which had been arranged in

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the time of Nádir Sháh, was continued by him and by his successors. Details will be found in the section on **Land Revenue**. Ahmad Sháh is said to have given Pishín as a *jágír*, doubtless on condition of the supply of military service, to Pakár Khán, Batézai, a man of great influence.

From the Durránis, Pishín passed into the hands of the Bárakzais, in whose time it was assessed to a revenue of 900 *tumans*, a sum equivalent to Rs. 16,650. A hundred *tumans* of the whole sum were on account of transit dues, and 800 *tumans* in lieu of having to furnish horses. No doubt the Bárakzais, like Ahmad Sháh, also levied a certain number of armed men, when required.

Masson's visits.

The adventurous traveller Masson passed through Quetta-Pishín about the year 1827.* He was on his way from Kábul via Kandahár to India and, after crossing the Khwája Amrán by the Khojak pass, travelled by Kila Abdulla, Arambi, Haikalzai, Kuchlák and Samungli to Quetta. He afterwards proceeded to the Bolán Pass via Sariáb. Before reaching the Khwája Amrán, he was robbed of nearly everything he possessed by some Afgháns, and was only rescued from being taken into slavery by the intervention of a *mullá*. Winter was approaching and the traveller experienced terrible hardships owing to the scant clothing that the robbers had left him. Much trouble was experienced by the caravan, with which he was travelling, from the Achakzais, of whom Abdulla Khán, then living at Kila Abdulla, was the chief. The Achakzais were, at this time, subject to the Kandahár Sardárs, for Abdulla Khán was afterwards degraded by them, probably owing to his reputed wealth. He appears to have been the only one of the Achakzais, who was not living in the depth of poverty, for Masson's description gives us to understand that the tribe as a whole were clothed in rags, while few had shoes, and there were very few arms among them. A duty of Rs. 2 per donkey load was exacted by the Achakzai chief at Kila Abdulla. From Kila Abdulla Masson journeyed to Quetta and thence via the Bolán to Sind. He noted that the Shahwánis, who now hold the southern end of the valley, had begun encroaching on the valley since the Bráhui ascendency had begun. The Kákars held Kuchlák and Aghbarg.

Occupation of Quetta during the first Afghán War.

We now come to the period of the first Afghán war, when Quetta first fell into British hands, and we are indebted to Major W. Hough of the 48th Regiment of the Bengal Native Infantry, for a detailed account of the march of the Bengal Column of the Army of the Indus through the Quetta-Pishín

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* See *Masson's Journeys in Afghánistán, Baluchistán and the Punjab*, pp. 320-30.

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District in 1839.* The Bengal column reached Sariáb on March 23, the animals being greatly jaded and knocked up after a march of over 800 miles from Ferozepur, and many of the camels having been lost *en route*. In those days, no human habitations were to be seen at Sariáb, though black sheep-skin tents, surrounded by flocks of sheep or goats, were to be observed on the mountain sides. On the 26th of March, the column reached Quetta and orders were received from Sir John Keene, prohibiting further advance until his arrival with the Bombay troops. The delay thus caused nearly proved fatal to the expedition, for the camp followers had been on half rations since March 8, and on March 27, the force found itself with only ten days' supply in camp. It became necessary, therefore, to place the troops on decreased rations. The fighting men were placed on half rations and the unfortunate followers were reduced to a quarter of a seer of flour apiece. There was no grain for the horses and until their arrival at Kandahár, they were fed on the green crops.

The force stayed in Quetta till April 6, idly consuming the small amount of supplies that it had brought with it, the camp followers starving, and the cavalry and artillery rapidly losing strength. At this time, grain was selling at three seers and flour at 2½ seers per rupee. A small bundle of lucerne cost Rs. 5, a maund of *bhúsa* Rs. 4, and a sheep Rs. 3. The force was also much harassed by attacks from the people of the country. No one could move out unarmed and camels were being constantly driven away. In this way two hundred camels were lost on the 31st of March, and though a large party followed them, it returned unsuccessful. The robbers appear to have generally made their way through the Hanna gorge, and it was eventually found necessary to picket it. The result was not, however, all that could be desired, as the picket allowed its own camels to go beyond the gorge and several were carried off on April 2. The cavalry pursued the robbers, killed three and wounded four, but did not recover the camels.

Meanwhile, arrangements had been made to hand over Quetta with Mastung and Kachhi to Sháh Shuja-ul-Mulk, whose representative was Muhammad Sadík Khán, Popalzai, and Captain Bean of the 23rd Native Infantry was appointed Political Agent at Quetta and in the District of Shál. He and Major-General Nott were left at Quetta with the head quarters of the second Infantry Brigade and the 43rd Native Infantry. A regiment of cavalry and a regiment of infantry from Sháh Shuja-ul-Mulk's contingent were also detained.

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* *A narrative of the march and operations of the army of the Indus in the expedition into Afghánistán in the year 1838-39*, by Major W. Hough, Calcutta, 1840.

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Captain Bean was ordered to raise local corps of Kákars which afterwards proved useful. On the morning of the 7th of April, the troops left Quetta. Some idea of the state to which they had been reduced, may be gathered from the fact that sixty horses had to be shot because they were too weak to proceed, and some of the camp followers were known to have fried and eaten the skins of sheep, and to have devoured the congealed blood of the animals. The first march was to Kuchlák and thence to Haidarzai. Here an attempt was made on the Sháh's baggage by the Kákars, but they were severely handled. The column soon afterwards crossed the Pishín Lora, and on April 12 arrived at Kila Abdulla. Here a battalion of the Sháh's infantry was left until the formation of the Bolán Rangers. This work was entrusted to Captain Bosanquet who subsequently raised a useful body of Achakzais.

Engineers had been busy preparing a practicable road over the Khojak pass and its passage was begun on the 14th of April. Fortunately, the Kandahár chiefs had only thrown forward small bodies of horse to watch the movement of the British force and the pass was not defended. The Achakzais were not, however, idle and carried off camels, plundered baggage and murdered camp followers, whenever an opportunity occurred of doing so with impunity. Although all the guns and waggons of the force had to be dismounted and handed over the pass, perseverance and good management gradually overcame all difficulties and the whole force passed the mountain by the 21st, though not without losing 27,400 rounds of musket ammunition and 14 barrels of gun-powder, besides a large amount of camp baggage, camels, etc. The supply of water at Old Chaman was not sufficient for a large body of troops, so all had to be hurried forward to the Kadanai river. The Bombay Column was some six or seven days in the rear, but met with no resistance worthy of relation in its march. It is unnecessary to follow the further movements of the Army of the Indus in Afghánistán, but it may be mentioned that, after Sir John Keene's forces had arrived at Kábul, General Willshire was ordered to proceed to Upper Sind, taking Kalát on his way. He moved to the Ab-i-Istáda lake to the west of the country of the Hotak Ghilzais, and passing through Marúf made his way through Toba and Barshor to Quetta. After consulting Captain Bean, he moved forward to Kalát which he captured.

Meanwhile, changes had been made in the garrison of Quetta and at the end of 1839, there was a force consisting of the 31st Native Infantry and a detachment of the Sháh's infantry and two guns in the place. Levies had also been raised and were being maintained at Quetta and Kila Abdulla. Captain Bean, deeming his own position secure, had despatched

the 31st Native Infantry to the plains of India. In 1840 he was also contemplating sending aid to Captain Browne, who was besieged at Kahán in the Marri hills, when the outbreak occurred in Mastung which ended in the revolution at Kalát, and the deposition of the British representative, Sháh Nawáz Khán. Emboldened by these proceedings and by the success of the Marris in the south, the Kákars made a night attack on Quetta on June 23. The assault was languidly made and repulsed by a few rounds from the guns. Meanwhile, reinforcements arrived from Kila Abdulla, under Lieutenant Travers, thus affording 600 muskets for the defence of the walls. The Kákars were shortly afterwards joined by the malcontent Bráhuis from Mastung, and from the 9th to 16th of July the garrison was kept constantly on the alert in the expectation of being assaulted. On the 16th, the enemy advanced, but the sudden appearance of a body of 150 horse, which had been despatched by the Political Agent at Kandahár, disconcerted them and they desisted from the attack. Shortly afterwards, dissensions broke out in the allied camp and Quetta was freed from the beleaguering forces on the 17th. HISTORY.

After the revolution at Kalát, Mír Nasír Khán II and his party advanced to Mastung and were anxious to enter into negotiations with the British Agent at Quetta. Lieutenant Loveday and Mr. Masson were prisoners in their hands and after various negotiations, Masson was despatched with a letter from Loveday promising to bring Bean's reply. Bean with ludicrous infelicity of judgment, rewarded the traveller's exertions by placing him under arrest, apparently suspecting him of being a Russian agent or spy. Disappointed at the result of their attempt to open negotiations, the insurgents, after an attack on Aghbarg in which they defeated Lieutenant Hammersly's Kási Irregular Horse but were beaten off by the villagers themselves, retired on Dádhar. On August 17 reinforcements, which had been sent down from Kandahár, consisting of four guns of the Sháh's Horse Artillery, three hundred of Christie's Irregular Cavalry, and the 43rd regiment of Native Infantry arrived. They reached Quetta on the 29th and General Nott himself followed from Kandahár and arrived at Quetta on September 22. On October 20 General Nott marched against Kalát which he occupied, and, leaving a garrison of the 42nd Bengal Native Infantry here and the 2nd regiment of the Sháh's Infantry at Mastung, returned direct to Chaman via Kila Abdulla.

We know little of the proceedings which characterized the beginning of the year 1841, but there appear to have been difficulties with the Pánézai Kákars owing to the withdrawal of certain payments, which they had been in the habit of receiving from the Quetta revenues, and to the hanging of five

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of their number who had been induced to come into Quetta by Jám Ali, the Government Munshi. Offence had also been given by the appointment of one of the Pánézai to the Bolán Rangers. The Bolán Rangers appear to have been recruited from all the bad characters of the country and, half of them being allowed to be absent on leave at one time, they made use of their liberty to plunder caravans and murder in the Bolán pass. To the difficulties thus occasioned may be added the want of tact displayed by the Political Officers at Quetta.

In the summer, Mr. Ross Bell, the Political Agent in Sind and Baluchistán, was in Quetta busily engaged in trying to set matters right, but he was already in failing health and died (it is said by his own hand) on July 31. Lieutenant Wallace assumed charge of the Agency temporarily on his own responsibility as Major (afterwards Sir James) Outram, who had been appointed to succeed Mr. Ross Bell, was at Hyderábád in Sind. He lost no time in setting out for Sukkur and arrived at Quetta from that place on September 2, after five days of actual travelling at that fearfully hot season over the intermediate distance between the two places of over 250 miles. He proceeded shortly afterwards to Mastung and Kalát to place the new Khán, Nasír II, on the *masnad*.

During the next few months, which culminated in the disaster to the British army at Kábul, the position at Quetta was very critical. Captain Hammersly reported the desertion of his Kákars from the Rangers, and considered this to be a prelude to a general insurrection of the Kákars connected with the Kábul disturbances. In November, Kila Abdulla had to be evacuated but meanwhile Gaffúr Khán, the chief of the Pánézai Kákars, arrived in Outram's camp, thereby mitigating the danger. Writing on November 4, Outram says "I do not think the inhabitants of the Pishín valley are likely to become malcontent, and, if they do so, there are no commanding situations from Quetta to the Khojak, where they could attempt to arrest our troops, except the Kuchlák pass which is connected with Quetta; and our position at Kila Abdulla could be strengthened, in case of necessity, to afford a flanking party to take up a commanding position at the crest of the Khojak on occasions of troops and convoys passing over."* On November 15, the Durráni *náib* of Shál, Muhammad Sadík, fled from Quetta, but the timely arrival of reinforcements relieved the authorities of all anxiety with regard to the Quetta position.

During the next few months, in spite of the murder of the British Envoy at Kábul and the hesitating policy of Lord Ellenborough, who had succeeded Lord Auckland in February 1842,

* Sir F. Goldsmid's *Life of James Outram*.

all remained quiet at Quetta. On the 7th of March, General England's brigade left Dádhar in order to ensure the advance or retreat of General Nott's Army, whichever course might be determined on, and the front detachment reached Quetta on the 16th of March. Hearing that General Nott was in want of money at Kandahár, General England resolved to move forward without waiting for his rear detachment. It was suspected that Muhammad Sadík, the ex-*náib* of Quetta, had raised a strong force among the Pishín tribes with the object of opposing General England's advance, but Lieutenant Hammersly, the Political Agent, appears to have been unacquainted with the strong position or movement of the enemy. General England's force reached Haidarzai in Pishín on the 27th and on the morning of the 28th, the column moved 6 miles towards Haikalzai, where an engagement took place in which the British troops were routed with the loss of 27 killed and 51 wounded. An account of the engagement will be found in the Miniature Gazetteer article on **Haikalzai.**

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After the reverse, a retirement on Quetta was decided on, and during the retreat, the Murghi *kotal* was found to be occupied, and it was decided, therefore, to cross the Lora river by the ford, lying below the headland which juts out from the Takatu range into Quetta valley. The enemy then moved from the *kotal* towards the river and were met by a company of native infantry which had been posted to crown the heights. Two other companies being despatched to cut off their retreat to the pass, they were defeated with a loss of 18 killed.

Affairs at Quetta were now considered so serious, that it was decided to put the cantonment into a state of defence, and half the troops were employed for a fortnight between the 3rd and 17th of April, in throwing up breastworks and entrenchments. General Nott subsequently expressed his entire disapproval of these proceedings, and was of opinion that the town and citadel could have been very well defended by 500 men. He instructed General England to bring up the treasure and stores, without which he was unable to pay either the arrears due to his troops or to procure carriage for field operations, and General England set out once more on the 26th. Three hundred Pánézai Kákars had meanwhile joined Muhammad Sadík, and a second engagement took place at Haikalzai exactly one month after the former defeat. Careful plans had been previously arranged, and the force was divided into three parties, one of which attacked the high hill on the left, whilst one stormed the small hill where the attack had failed on the previous occasion. The third party was in reserve. Little opposition was met with, and the enemy suffered a severe defeat. The force reached Kila Abdulla on the 30th and, moving over the Khojak, joined hands with the brigade sent

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by General Nott from Kandahár. On the march communications had been opened up by Col. Stacy with the Achakzai tribe and, as a result, communication was maintained uninterruptedly during the remainder of the stay of the force at Kandahár.

When General Nott left Kandahár for Ghazni and Kábul, part of his force was sent back to Quetta, which was reached with trifling loss on August 26. Meanwhile, the evacuation of the country had been ordered and General England's force left Quetta in three columns, the first on September 12, the second on September 23, whilst the final evacuation took place on October 1. The two first columns met with no opposition, but a few Kákars were posted near Sar-i-Bolán when the last column began the descent. On October 20 the Governor-General in Council had much satisfaction in announcing "the successful termination of the arduous and difficult operations, effected by Major-General England, of withdrawing from the Khojak and Bolán passes into the valley of the Indus, a portion of the force lately stationed at Kandahár, and of the scattered garrisons of the intermediate places between the eastern face of the Khojak mountains and the plains of Kachhi."

Second occupation of the District.

Lease of Quetta.

After the retirement of the British from Baluchistán in 1842, Pishín and Shorarúd were occupied by the Afgháns, as soon as their power was again established, while Quetta once more fell into the hands of the Kháns of Kalát and remained under their administration until its occupation by part of Sir Robert Sandeman's escort in 1876. The events which led to Sir Robert Sandeman's first and second Missions to Kalát in 1875 and 1876 are matters of general history which need not be recorded here. In the new treaty with Kalát, which was ratified at the end of 1876, it was arranged that British troops might be stationed in Kalát territory, but pending the final ratification of the treaty by Lord Lytton and the Khán, at Jacobábád, a portion of Sir Robert Sandeman's escort consisting of 300 men of the 4th Sikhs Punjab Frontier Force, under the command of Captain Scott was located in Quetta with the Khán's consent. The establishment of the Baluchistán Agency with its head-quarters at Quetta followed early in 1877, and it was arranged that one of the Agent to the Governor-General's Assistants should hold political charge of the District. At the end of the year the Khán proposed that the Assistant should be placed in charge of the realization of the land revenue, the fees on *káfilas* and the octroi duties of the Quetta cantonment, and these proposals were accepted by the Government of India with the modification that the transit fees on *káfilas* were to remain in the hands of Kalát officials, while the least possible alteration was to be made in the current rates and in the method of the collection of the octroi taxes. Magisterial powers were at the

same time conferred on the Agent to the Governor-General and his Assistants. This arrangement continued up to March 1883, after which Quetta was leased from the Khán on an annual quit rent of Rs. 25,000.

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The second Afghán War: cession of Pishín.

Soon after it had been occupied, the District became the base for the operations in Afghánistán. On the general advance being made on New Year's day, 1879, Captain Wylie was appointed Political Officer in Pishín with head quarters at Gulistán Kárėz. General Stewart left behind in Pishín a column of 300 Infantry, a squadron of the 8th Bengal Cavalry, and two mountain guns under the command of Major Keene, in order to help the Agent to the Governor-General in the preservation of the peace of the country. Nor was this precaution unnecessary, as an attack was made shortly afterwards by the Achakzais on a guard of the 1st Punjab Infantry at Kila Abdulla. The assailants were repulsed, as they were expected, and a murderous fire greeted them from all sides. The Achakzais and some discharged sepoys of the Amír's army, numbering 2,000 in all, at one time threatened the line of communication in front of Gulistán Kárėz, but the prompt march of Major Keene's column quickly brought them to their senses. The first phase of the Afghán war closed with the signing of the treaty of Gandamak by Yakúb Khán on May 26, 1879, under the sixth article of which it was provided, that the districts of Sibi, Pishín and Kurram were to be ceded to the British Government.

Matters now remained fairly quiet until the unfortunate disaster which befell General Burrow's brigade at Maiwand on July 27, 1880, when the Achakzais and Kákars began collecting and arrangements had to be made for securing the lines of communication between Quetta and Chaman. General Phayre's troops occupied the crest of the Khojak in August and, on the 4th and 7th, skirmishes took place with the Achakzais. In September, General Baker marched from Chaman into the Toba highlands, accompanied by Captain H. Wylie as Political Officer, in order to punish the Achakzais for their behaviour. A number of sheep and goats were captured, and some small hamlets in the Arambi glen were destroyed, when the headmen submitted unconditionally and, in addition to their losses in cattle, were ordered to pay a fine of Rs. 600.

Final retention of Pishín.

On the close of the war and the evacuation of Kandahár, the question of the permanent retention of Pishín and Sibi was much discussed, and in April 1881, Lord Hartington, as Secretary of State for India, sanctioned the postponement of the final retirement owing to the difficulties of immediate and early withdrawal. It was not till the end of 1882, that final orders were given for the permanent retention of Pishín, and about

HISTORY.

the same time, British authority was extended over the little valley of Shorarúd.

Formation of Quetta and Pishín into a single administrative charge.

On the Quetta-District being made over to the British Government in perpetuity from April 1, 1883, it was combined with Pishín into a single administrative charge, and Mr. (now Sir) H. S. Barnes was appointed the first Political Agent. Previous to this amalgamation, Mr. R. I. Bruce, Captain Martelli, Lieutenant Ramsay, Lieutenant Kennedy and Lieutenant Jennings had held charge of Quetta; while Captain H. Wylie had been succeeded in Pishín by Lieutenant R. H. Jennings and Colonel E. S. Reynolds.

List of Political Agents.

The following officers have held the appointment of Political Agent since April 1883 :—

Mr. H. S. BARNES, I.C.S.	April 1883 to 23rd November 1885.
Mr. J. A. CRAWFORD, I.C.S.	to 22nd March 1886.
Mr. H. S. BARNES, I.C.S.	to April 1887.
Mr. A. MARTINDALE, I.C.S.	to 7th November 1888.
Mr. H. S. BARNES, I.C.S.	to 20th April 1889.
Major / Lt.-Col. G. GAISFORD	to 7th July 1895.
Captain A. F. BRUCE	to 25th July 1895.
Captain P. J. MELVILL	to 9th May 1897.
Captain A. McCONAGHEY	to 12th May 1897.
Mr. A. WILLIAMS, I.C.S.	to 2nd November 1897.
Captain H. L. SHOWERS	to 7th December 1897.
Mr. A. WILLIAMS, I.C.S.	to 18th October 1898.
Lt. A. B. DRUMMOND	to 11th November 1898.
Captain J. RAMSAY, C.I.E.	to 11th December 1899.
Captain H. L. SHOWERS	to 31st March 1900.
Captain J. RAMSAY, C.I.E.	to 20th May 1901.
Captain J. F. WHYTE	to 14th June 1901.
Major J. RAMSAY, C.I.E.	to 31st October 1902.
Captain A. D. G. RAMSAY	to 17th November 1902.
Major F. W. P. MACDONALD	to 27th October 1903.
Captain S. G. KNOX	to 30th November 1903.
Major F. W. P. MACDONALD	to 31st March 1904.

Modern incidents.

Since the formation of the District into a single charge, no serious cases of combined action among the tribesmen have occurred to disturb the peace of the country, though isolated cases of a serious nature have been not infrequent. In 1889, the Achakzais became unsettled owing to the weakness of their chief, Abdul Hamíd Khán, and arrangements had to be made for the reorganisation of the Achakzai Levy service. In July 1892, the Achakzais expressed a wish for more direct interference than had hitherto been the practice and the levy posts of Jilga in Tabína and Dobandi were established. In consequence of interference by Afghán officials in the Achakzais' affairs, a post was also established at Sara Karúna which was subsequently moved to Bahlolawar. In 1895, one Faiz Muhammad caused much commotion by his depredations an account of which has been given in the article on **Cognizable Crime**, and two years later, Jafar Khán, Sarparra Bráhui, after

murdering some tonga drivers on the Quetta Mastung road made a descent on the Ghazaband pass and murdered two lascars. In 1899, a good deal of unrest occurred, chiefly owing to offers by the Amír of land and water which were held out to emigrants from Baluchistán, and a raid was organised on the Brewery at Kiráni in which 11 men were killed and 9 wounded. HISTORY.

Administrative developments.

Among administrative changes since the formation of the District, may be mentioned the temporary transfer of the Bolán Pass District from Thal Chotiáli to Quetta-Pishín in March 1887. It was again transferred to the Kalát Agency in June of the following year.

Chaman formed part of the Pishín Sub-division up to 1888, but on the extension of the railway works beyond Kila Abdulla, temporary arrangements were made for its administration, first by locating the náib-tahsíldár of Pishín in the Khojak pass, and afterwards by placing the District Superintendent of Police in charge of it. A Native Assistant was appointed in 1890. In July of the same year, the appointment of an Extra Assistant Commissioner was sanctioned for the Pishín Sub-division, and, in 1892, the Assistant Political Agent was placed in charge of the Quetta Sub-division. The Shorarúd Sub-division was transferred to Quetta from Pishín in 1893. The appointments of Cantonment Magistrate and Treasury Officer were combined up to 1888, when the offices were separated. An Assistant Cantonment Magistrate was added in 1904.

In 1895 the northern boundary of the District was laid down by the Baloch-Afghán Boundary Commission as far as Chaman, and the work was continued to Koh-i-Malik Siáh in the following year. At the same time a number of Afghán posts were established across the border principally with the object of preventing smuggling.

Archæology.

There are no imposing structures of any kind in the District to indicate its condition in ancient times, but many mounds are scattered through it, generally in the centre of the plains, each of which has a local tradition attached to it. Ruins of old mud-built forts are occasionally met with and some ancient *kárézes* are to be found in the Quetta tahsíl.

Mounds.

The tumuli vary from small hillocks to large masses of earth, like the Quetta *míri*, now the site of the arsenal, the base of which is an oval 600 feet long by 400 feet wide, and which rises 80 feet above the plain. They are probably of different origins, and a few of the small ones may be even natural; but the true mound is manifestly artificial.

The following interesting account of the Quetta *míri*, which may be taken as fairly typical of all, was given by Major J. F. Garwood, R.E., in 1887.*

*Journal of the Asiatic Society of Bengal, Vol. LVI., Part I., No. III of 1887.

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"The Quetta *míri* is a mass of indurated clay. On the top were a few houses, probably occupied formerly by the *maliks* of the village or small township of Shál kot, the houses of which were grouped together under the shadow of the *míri*. In 1883, before I came to the District, the base of the mound was cut into for a magazine, and previously to that some tunnels had been run well into the mound. Nothing of particular interest seems to have been found, or my predecessors would have left some record of it. Some bones I hear were come across, including some human bones, the only ones found at any time recently in the mound.

"About a year ago I commenced clearing the top of the *míri* for some buildings. This necessitated cutting the top 15 feet off the mound, besides excavating in places to an extra depth of about 5 feet or 20 feet in all. During these excavations one could not fail to be struck with the peculiar constitution of the material of which the mound is composed. In every direction the soil is permeated by bones, broken pottery, ashes in layers, and charred wood or charcoal. The bones are said to be the bones of domestic animals but of what animals I do not know at present, but have sent samples to Calcutta for identification by competent anatomists. The remains got comparatively few as the depth increased, but were always present in considerable numbers. Near the top very large *jallas* or *gharahs* frequently occurred; no such articles of pottery are, I believe, now made in the District. The general impression, left on the minds of those of us who were constantly present during the earth clearance, was not that the remains were necessarily of any very high antiquity and that the mound must have been occupied by constant successions of people for an indefinite period. I am still quite puzzled to account for the presence of so many lumps of charred wood at considerable depths, most of them quite fresh and shewing the grain of the wood. From Sir Oliver St. John's account, the same peculiarity was noticed in the mound at Kila Abdulla. The charcoal of course might be of any age, being comparatively indestructible, but its existence in such large quantities in the aggregate is very puzzling. The buildings, I do not think, are likely to have been periodically destroyed by fire, as in some of the old Greek towns, and the presence of the lumps of charred wood is more probably due to some use the mound was frequently put to; but this of course is mere personal conjecture.

"The articles of interest, few in number, which we found in the Quetta *míri*, have been sent to the Indian Museum at Calcutta. There are some fragments of pottery of an archaic type, which were found in the lower strata of the excavations, and also a ring-stone and jasper corn-crusher, which the Museum authorities think are probably prehistoric. They

were found on a low level, but higher than the Greek statue afterwards unearthed. There was also found a small bronze vessel which may be Greek; and at the lowest depth attained to, and near the centre of the mound in plan a bronze or copper statue of Heracles, 2¼ feet high, holding in his left hand the skin of the Nemean lion. The statue,* which was much corroded but otherwise nearly perfect, was found standing nearly erect bedded in hard clay. The ground below and around was carefully excavated to a distance of several feet, but nothing further was found except a few animals' bones. ARCHÆOLOGY.

"At a medium level was discovered a small vase of common pottery, with angular markings in paint round the swell of the vase below the neck. I am anxious to find out the probable date of this vase as Major Shepherd, R.E., found a lot of pottery with similar markings on it near Bellali (Baléli) but in Major Shepherd's absence in England I have not been able to ascertain whether it was in the *míri* or elsewhere that he found it. Nothing more of interest is likely to be discovered just now in the Quetta *míri*, but in considering the comparative poverty of our findings in such a promising site, it must be borne in mind that the excavations only went down to a depth of 20 feet out of the total height of 80 feet of the mound, and anything of extreme antiquity would probably be found lower down.

"Our excavations having connected this District with the Greek period, at least ought to encourage others more competent to carry the investigations of these mounds further, and Captain Lock's discoveries at Kila Abdulla in 1881 seem to have been even more interesting."

Next in importance is the Spín-ghundi mound, which lies at the foot of an off-shoot of the Khwája Amrán range in the limits of the Habíbzai village in Pishín close to the railway line. Evidently this is the mound which was excavated in 1881 by Captain Lock, Political Agent, Pishín, under the orders of Col. Sir Oliver St. John. The latter officer supplied the following notes to Major Garwood in 1887 :— Spín-ghundi.

"Underneath layers of mud, charcoal, or rather charred wood, and bones were a number of small rooms built of very large baked bricks, as far as I can recollect about 18 inches by 10 inches by 6 inches. These bricks had no marking or inscriptions of any sort.

"In the rubbish were found fragments of pottery, bits of glass, copper, brass and iron. Two at least of the fragments of pottery had been bottoms of basins or round dishes and were glazed yellow, with indented and separately coloured figures on

* *Note.*—A photograph of the statue will be found at plate No. X of the Journal, and it has been reproduced in the frontispiece of this Volume by kind permission of the Council. The statue was sent to the Indian museum and is reported to have since disappeared.—ED.

ARCHÆOLOGY.

them, in both cases, of men leading goats. The best of the two I gave to the British Museum in 1881. What became of the rest of the things I do not know. The excavations were incomplete when I left."

Local tradition tells a curious story about this mound. It is said that a pious woman, in order to save herself from being dishonoured by a king, named Dehsúr, who lived on the mound, went to the Lamaral ghundi, which lies to the west of the railway line, about 100 yards from the main mound, taking with her a bowl of water and a dog, and that there, in answer to her prayers she, and the bowl, which she was carrying, and the dog, which accompanied her, were turned into stone, while the king's village was destroyed and the inhabitants buried in it. A column of stone, standing apart from the neighbouring hill, about 6 feet high and 4 feet in circumference, seems to be responsible for the origin of the tale.

Other mounds.

The other noticeable mounds are the one between Katír and Kuchlák in the Quetta tahsíl known as the *Kásiáno Dozakh ;* Tor Ghundi near Baléli, Tor Wari or Ghundi between Panjpáí and Muhammad Khél in the Shorarúd valley; Riása Ghundi in the limits of Saréla Malikyár, Báburi and Akhpara Uri near Saranán, Srah Kila, i.e., the red fort, in Malézai limits five miles from Pishín, Khúni Kala in Tangi Karbala, and Zaranki about three miles from Spínatizha levy post in the Pishín tahsíl.

About a mile to the south of Kazha Viála in Barshor is a hillock known as Khazína Band and local tradition asserts that the place contains the treasure of some ancient ruler. Close to the track to Nárín, a big boulder is pointed out which is said to block the gate of the treasure house. After its surface has been washed by rain, paintings in black are to be seen upon it and the Assistant Gazetteer Officer, R. S. Diwán Jamiat Rai, noticed the picture of an elephant with driver and *haudah* in September, 1903.

Mound of Riása Ghundi.

The Riása Ghundi was visited by Dr. M. A. Stein, the Archæologist, in the winter of 1904, and he has kindly supplied the following description of the place :—

"The plain of Pishín is the oldest historically attested oasis of Baluchistán. Hence I was specially interested in visiting what is apparently the largest of the relatively few ancient mounds traceable within its limits. The mound known as Riása Ghundi is situated *circ.* 9 miles to the north-north-east of Pishín tahsíl, and about one mile to the north-east of the 'Band' of Khushdil Khán. It rises on a small plateau of gravel which is skirted by the Sardár Káréz and adjoined northward by the fields of the small village of Chishtián sloping down to the left bank of the Lora river. The mound, *circ.* 120 yards long from north to south with an average breadth of *circ.* 60 yards at

its foot, still shows a height of *circ.* 50 feet above the level of the fields south of it. Extensive excavations carried out after the fashion of those at Akra, and for the same purpose, have completely destroyed the old slopes to the south and east.* These diggings make it easy to ascertain that the whole mound is composed of accumulated 'cultures strata' containing great quantities of broken pottery, rough building stones, ashes, bones, and similar débris embedded in soft earth which evidently represents the remains of mud walls. The pottery, generally coarse and undecorated, proved of remarkable hardness and among it fragments of large jars were frequent.† Some pieces belonging to the mouths of such jars showed a simple scroll ornament. Small fragments of a finer red pottery painted with simple lineal patterns in black were also plentiful. Of structural remains I could find no trace, nor could I hear of coins of any sort being ever found on or around the mound. The north and north-east foot of the latter is adjoined by a low plateau of similar origin, rising only *circ.* 15 feet above the field level. This, too, is being now dug into for manuring soil. This plateau may either mark the remains of a mound dug down already at an earlier period or else a site of later or less continuous occupation. Some small fragments of pottery, glazed in yellow and light green, could be picked up on its surface. ARCHÆOLOGY.

"At a distance of *circ.* 500 yards to the east of the mound and parallel to it stretches a narrow steep ridge composed of conglomerate, rising *circ.* 100 feet above the fields. This ridge which at its south end is connected with other but lower ridges running at right angles to it, bears pottery fragments on its top and slopes, thus showing that it, too, was occupied in earlier times. Another mound, known as Manzakai Ghundi, was visible *circ.* 1½ miles to the north-north-east across the bed of the Barshor branch of the Lora. It was described as being of the same character and composition as the Riása Ghundi. As to the periods during which the latter accumulated, I was unable to form any definite opinion. In the absence of coin finds which, in the whole of this region, seem to be of remarkable rarity, or of similar reliable evidence no chronological classification of the pottery seems at present possible. All that can be safely asserted is that the accumulation of so high a mound presupposes occupation prolonged for a considerable period. This itself is easily accounted for by the favourable position of the site, the adjoining ground offering special facilities for irrigation both from the Lora

* The earth and ashes are used as manure.—ED.

† A large jar in complete preservation was discovered in the mound some years ago. It is now (1905) in the Pishín tahsíl. It is 3′ 4″ high and 9′ 8″ in circumference at the widest part.

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and from the drainage area now closed by the Khushdil Khán Band."

Forts.

The ruins of old mud forts are to be found at Shéran Kila near old Bazar about 3 miles to the north of Pishín, Kila Páind Khán near Nau Bazar, Khúni and Sara Kala already referred to, and the three forts built by Háji Khán Kákar in Toba Kákari, Barshor and near Iskán Khán Kili in the Pishín tahsíl. The Khushdil Khán fort built by Khushdil Khán, a deputy of the governors of Kandahár who lived in Pishín, is now held by the local levies and a school is also located in it.

The most important of these forts is the Háji Khán Kila in Toba Kákari. It lies in the Chági or Tsági valley and was built by the notorious Háji Khán, Ahmed Khél Kákar, and is now in ruins. In 1839, when it was still standing, it was described as a rectangle, about 85 yards by 60 yards, situated on the west side of a solitary mound, running up on to which was a sort of triangular outwork, the mound having been formerly crowned by two towers, known as the *sháhi burj*, which were connected with the main building by long curtain walls. Besides the towers on the mound, the fort possessed seven large towers or bastions, which were strongly built, as were also the connecting walls. The solitary gate-way was in the tower at the south-east angle. Inside were various buildings, capable of accommodating the family and retinue of an Afghán chief. The fort was abandoned when the Bombay Column under General Willshire approached it in October 1839 and never seems to have been reoccupied.

The great-grandson of Háji Khán, the builder, is one Muhammad Azím, who lived at Tirkha in the Quetta tahsíl, but he has lately (1905) gone to Kandahár.

Ancient *kárézes*.

Ancient *kárézes* known to the people of the country as *Gabri* or Zoroastrian, are to be found in Sariáb and Kiráni in the Quetta tahsíl. A portion of the channel of one of these *kárézes*, which was lined with earthen pipes, was tapped when the Kéchi Bég Káréz was being improved some fifteen years ago, and now forms part of that *káréz*. These *Gabri kárézes* have never been scientifically examined but are probably of great age and will well repay investigation.

Old coins.

Large quantities of old coins are generally obtainable from dealers in the Quetta town, many being imported from Seistán and Afghánistán. The coins discovered in the District have hitherto been few in numbers. A list of them with their descriptions is given in the following table :—

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Coins.	When and where found.	* Identifications.
1 Copper coin ...	Found in sand hills near Chaman about May 1903.	Ghaznivid, name and date uncertain.
1 Silver coin ...	Ditto. ...	Ghaznivid, probably Mahmúd.
10 Silver Kiráns 2 Silver Sháhis.	Found near Chaman on the 25th of April 1904.	These coins are of Sháh Rukh and Abu Saíd of the Tímúrid dynasty.

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Ethnographical history.

Little or nothing is known of the ethnographical history of the District. It is certain, however, that the Afgháns and Bráhuis, who now occupy it, are comparatively recent immigrants. Who their predecessors were, is a subject which is buried in obscurity. That some of the earliest inhabitants were Zoroastrians by religion, may be inferred from the prevalent traditions as to the construction of some of the most ancient *kárézes* by Gabrs, but their nationality is unknown. The Afgháns appear to have entered the District from the north-east emigrating from their home round the Takht-i-Sulaimán; the Taríns, it is believed, came into the District about the fourteenth century. Tradition speaks of their predecessors as the Zamands of Pishín, a tribe of some importance in olden days and said to be Afgháns descended from Khairuddín *alias* Kharshabún, son of Saraban. They are now only represented by a small section, called Muhammadzai living at Chur Kulálzai. The Bráhuis of the Quetta tahsíl are offshoots from the parent stock inhabiting Kalát territory, and their presence in the District appears to date from about the eighteenth century.

The first regular census of the District, the results of which have been published, was carried out in 1901. The District was divided into three divisions for the purpose, (*a*) the towns, railway, bazars, etc., in which a synchronous enumeration was made on the standard schedule, (*b*) the tribal area, i.e., Toba Achakzai and the Sarlath hills, in which estimates were prepared through the Levy establishment and headmen of tribes, and (*c*) the remainder of the District, in which a rough house to house enumeration was made by the subordinate revenue staff. This was not synchronous. The results arrived at gave a total population of 114,087, of which 29,447 were censused on the standard schedule and represent, in the main, the non-indigenous population of the District. A detailed statement containing the principal census statistics will be found in table II, Vol. B.

According to the census of 1901, the total number of occupied houses in the District was 24,952 : 7,781 in the towns and

* The Editor is indebted to the courtesy of Professor Rapson of the British Museum for the identifications.

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17,171 in the villages. Of the total population of 114,087, the urban part numbered 28,369 and the rural portion, 85,718. The incidence of population per square mile is 22, the highest being 83 in the Quetta tahsíl and the lowest 2 in the Shorarúd valley. The population per house in urban areas is 3·6 and in rural areas 5.

Towns and villages.

The District possessed (1901) three towns, **Quetta, Pishín** and **Chaman,** all of which have grown up since the British occupation and are inhabited largely by an alien population. The first is the only one of importance; Pishín has decreased in size since the date of the census owing to the removal of the regiment previously quartered there, and Chaman owes such importance as it possesses to the presence of troops.

In pre-British days the number of villages was smaller, the people being obliged to live together for offensive and defensive purposes. There is now a tendency to spread out, and new villages and hamlets are rapidly springing up. A report mentions 92 villages and 59 *kilis* or hamlets in the Pishín tahsíl in 1884, a number which had been nearly doubled in 1901 when 271 were recorded. The District possessed a total of 329 villages in 1901, in an area of 5,127 square miles, or one village in 15·6 miles. The Achakzais of the Chaman Subdivision still largely adhere to their nomadic habits, and have only 4 permanent villages in an area of 1,236 miles. In Shorarúd, too, there are only 7 villages in 634 miles. The people in Quetta and Pishín are more settled, the former tahsíl possessing 47 villages in an area of 540 miles, and the latter 271 villages in 2,717 miles. There are very few villages which have a population of over 1,000 souls. The most important places are mentioned in the Miniature Gazetteer of each locality.

Character of villages.

The villages consist chiefly of hovels made of mud placed together without order or arrangement. The older ones are surrounded by mud walls, but in most cases these are now falling into disrepair. Narrow lanes full of refuse of all sorts run between the blocks of houses. Usually there are few trees but orchards, enclosed in high walls, are now springing up and tend to improve the dreary surroundings. In a few places, such as Hanna and Barshor, the houses are scattered and are sometimes picturesquely hidden among vines and apricots.

Growth of population.

Previous to 1891, no regular census was attempted, and the growth in population cannot be illustrated by reliable figures. The only information available is derived from the enquiries made by Rái Hittu Rám in 1884, in connection with the land revenue arrangements of the Pishín tahsíl, when he roughly estimated the number of houses at 3,376 and the population at 14,575. In 1891, a regular enumeration was carried out in

Pishín and Quetta and a house to house census was taken in the villages, with the result that the population of the District was found to be 78,662. To this total the Pishín tahsíl contributed 37,180, an increase of 155 per cent. over the estimate of 1884. In 1901, when the census was better done than in 1891, the total population was, as already stated, found to be 114,087, of which 51,753 were in the Pishín tahsíl. The figures of 1901 for the whole District show an increase of 45 per cent. over those of 1891, while the figures of the Pishín tahsíl show an increase of 39 per cent. POPULATION.

Besides the improved methods, on which the census of 1901 was carried out, the increase in the population of the District may be attributed partly to the large influx of troops, an influx which has been accompanied by an increase in the alien civil population, and partly to the greater security to life which has attended the British occupation. It may also be presumed that the rise in the standard of living, which has undoubtedly taken place among the indigenous population, has led to more frequent marriages and a consequent increase in birth rate.

Migration.

As in other parts of Baluchistán, a continuous flow of migration is constantly going on, the causes being the nomadic habits of some of the tribes, the variations in the climate, inducements occasionally held out by the Afghán authorities across the border, and trade. The nomadic habit appears, however, to be on the decrease. Almost all the Achakzais of Toba, who represent about 15 per cent. of the rural population, are nomadic in their habits, living in various parts of Toba from April to October and moving down to warmer parts in November. The Hamídzais (3,506) are the only section which lives in Toba throughout the year. The Ashézais (2,228) move to Murda Káréz and the Chaman Sahará; the Khwájazais, a section of the Ashezais, and the Bádínzais to Rég in Afghánistán, while the Alízais (2,503), the most important section of the Nasratzais, move to the Sarwésht circle in the Pishín tahsíl. Among the tribes in Pishín, the Isa Khéls (377), Biánzais (237), Shamozais (619), Churmi (701), and Ahmad Khél Kákars spend the summer in their hamlets, but in winter move to the Pishín plain with their flocks in search of pasture.

Most of the Bráhuis (6,454) in the Quetta tahsíl regularly migrate, after sowing the spring crop, to Kachhi where many of them own land; the downward move begins about the end of November and the return journey about the end of March. Their example is followed by the Sumalári (229), Pír Kánri and Sásoli Bráhuis, who subsist chiefly on the produce of their flocks and camels, and spend the summer in the Shorarúd valley.

Emigrants to Afghánistán.

On more than one occasion a good many emigrants have been induced to proceed to Afghánistán, on the strength of

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gifts of land and water, pensions, etc., promised by the Afghán officials. Some emigration took place in 1896-7, and fair promises, coupled with high prices and bad seasons, proved sufficient to induce a number of men to cross the border in the autumn of 1899. Many of these emigrants have since returned, but the inducements have proved too strong for a good many of the Achakzais, and it has been estimated (1905) that about 1,472 families have recently left the District for good.

Emigration for trade.

Saiads, Taríns and Kákars from Pishín and some of the people of Panjpái and Muhammad Khél in Shorarúd visit India and other places to engage in trade, and remain there for several years until they have amassed sufficient money to enable them to return to their homes. From a rough estimate made by the Pishín tahsíl officials in 1905, it appears that about 1,092 men from that tahsíl are trading in India, 68 in Ceylon, 36 in Australia, 5 in Kábul, 3 in Afghán Turkistán, 6 in Chinese Turkistán, and 16 in Meshed. The trading centres in India, where Pishín men are most numerous, are Hyderábád in the Deccan, parts of Berár, Nágpore, Khándésh, and Calcutta. Arrangements have been made for traders proceeding to the Nizám's territory to obtain certificates of their residence and respectability from the Political Agent. So large is the exodus from the village of Karbala that it is said that hardly an able-bodied landholder is to be seen in that place. Among the tribes in Pishín, the Taríns are most numerously represented among such emigrants.

Periodic immigration.

The periodic immigrants into the District are the Ná Khél and Báik Khél Tarakis, and the Kábul Khél and Bánzai Kharots. These men are chiefly flock-owners, who enter the District in the neighbourhood of Sábúra from Afghánistán about the end of October to graze their flocks in Pishín and Shorarúd during the winter. They return to the neighbourhood of Pishín bazar in April, where they shear their flocks and sell the wool, afterwards marching back to Afghánistán in the first week of May. The camel owners, who visit the District in the cold weather, are the Yá Khél, Bori Khél, Niámat Khél, Úsh Khél, and Kamál Khél Násars, and the Ahmand Khél and Haidarzai Kharots, besides the Kábul Khél and Bánzai Kharots already mentioned, who combine camel owning and flock owning. Such of them as can get loads for camels at Yáru Káréz return at once to Afghánistán, while others make their way westward to Seistán and other parts of Persia; others, again, send their families to Sibi or Duki with the female camels, and themselves go to Harnai or Spíntangi, from which stations they engage in transport work with Sanjáwi, Loralai, Fort Sandeman, Thal, Lúni and Duki until March. Those who own only a few camels generally remain for the summer in Tora Sháh, Manzakai, Khudádádzai and round Bostán,

in Pishín where they engage in hawking, and return to Afghánistán after three or four years, but most of them return to Afghánistán in April. In summer many Bráhui camelmen encamp in the Quetta tahsíl to obtain transport work especially coal carrying work. They are principally Bangulzais, Kambráris and Méngals.

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Immigration from India.

In 1901, 18,682 persons (14,657 males and 4,025 females), were enumerated in the District, who had been born in Provinces of India, and 2,352, who had been born in Native States in India.* Countries adjacent to India, chiefly Afghánistán, had contributed 1,958 immigrants. These figures include the sepoys serving in native regiments.

The Province in India from which most immigrants come is the Punjab (11,804), which is followed by the United Provinces (3,346). Bombay and Sind come next with 1,426 and 1,404 respectively. Of Native States, those of Rájpútána are most numerously represented. The immigrants from the Punjab are drawn principally from the Districts of Amritsar, Siálkot, Jhélum, Ráwalpindi, Jullundur, Gujránwála, Gujrát, and Hoshiárpur.

Age statistics, vital statistics, infant mortality and infirmities.

No detailed record of age was attempted in 1901, except in the towns, military stations and bazars along the railway line which were enumerated on the standard schedule; in the District adults were merely distinguished from minors. Out of a total population of 114,087, there were 75,894 adults: 48,056 males and 27,838 females. The number of children, 12 years and under, was 38,193: males 20,889 and females 17,304. In the towns, for which alone accurate figures are available, most of the people, both men and women, were found to be between the ages of 20 to 40.

Vital statistics are not recorded in any place in the District except the Quetta municipality, where there were 152 births and 316 deaths among 13,517 persons during 1902-03. This gives 11 births and 23 deaths per thousand of the population.

In 1905, a summary enquiry regarding the birth and death rate was made by the Pishín tahsíl officials by selecting a few villages in each circle, the result obtained indicating 4 per cent. of births and 2·7 per cent. of deaths on the total population during the preceding twelve months. The highest rate, both of births and deaths, was in the Surkháb circle, births 7 per cent. and deaths 5 per cent. Longevity among the indigenous population appears to be infrequent owing to constant exposure and bad nutrition.

Of the few infirmities recorded in the area censused on the standard schedule, cases of blindness were most numerous. Leprosy does not seem to be indigenous, the figures showing a

* *Census of India*, 1901, Vol. V-A., table XI.

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solitary case in a total of 25.* Most of the afflicted are to be found in the towns where they gather to beg.

Comparative numbers of the sexes and civil condition.

The disproportion of women to men in the towns, cantonments and bazars, was very great in 1901, as there were only 270 women to every thousand men. It may be assumed that the disproportion is greater in March, when the census was taken, than in summer, as many women leave for their homes in India to avoid the cold of winter. In the Quetta Town, where the alien population is becoming more settled than elsewhere, there were 429 women to every thousand men, but in the cantonment there were only 142 women to every thousand men.

Among the rural population there were 39,107 women and 46,611 men, or 839 women to every thousand men. Among the Afgháns, who form the major portion of the population, the proportion of females to males was 838 to 1,000. The Bráhuis had 873 females to every thousand males; among the Saiads the women exceeded the men the proportion being 1,033 females to 1,000 males. This large proportion among the Saiads may be accounted for partly by the fact of their comparatively comfortable circumstances and partly by the absence of a good many of the men on trading and other expeditions. Another tribe having more females than males, was the Kási (1,015 females to 1,000 males), due doubtless to the prosperous circumstances of its members, and their ability to marry several wives and employ female servants. The Tarína have 850 females, the Kákars 836, and the Achakzais, who were enumerated as a branch of the Taríns, 816 females to every 1,000 males.

Out of the total population of 114,087, civil condition was recorded in the case of 29,447 persons only. Of 23,224 males, 11,079 were married, 1,076 widowers and 11,069 bachelors. Of 6,223 females, 519 or about 8 per cent. were widows, 2,189 were unmarried, and 3,515 were married. The figures, of course, represent anomalous conditions prevailing among the non-indigenous inhabitants of the District. The excess of married men over married women is accounted for by the presence of a number of married men among the troops whose wives are in India. The proportion of married males to females among Musalmáns was 4,775 to 1,576, among Christians 368 to 268, and among Hindus 4,984 to 1,423; among unmarried Musalmáns the proportion of males to females was 4,631 to 881, of Christians 2,746 to 321; and of Hindus 3,133 to 848.

Marriage customs.

Among the indigenous classes, every man marries as soon as he possibly can, but the payment of bride price (*walwar*) compels many to wait till middle age. This is especially the case with the poorer nomadic classes among the Achakzais and

* *Census of India*, 1901, Vol. V.-A., table XII.

Kákars. Marriage almost invariably takes place after puberty, one of the most important reasons being the heavy demands which are made on a wife and which can only be performed by a full grown woman. For not only do the ordinary domestic duties devolve on her, but she is required to help in loading, unloading, pitching and striking the *kizhdis*, tending the flocks, making felts, cutting and bringing home fodder, and generally to assist in all agricultural operations except ploughing and sowing.

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So far as can be ascertained polygamy is rare, except among the well-to-do, though the people have no objection to a plurality of wives up to the limit of four prescribed by Muhammadan Law. It has been roughly estimated that the percentage of polygamists among the married men of the district is 5 among the Achakzais, 30 among the Taríns, 10 among the Pishín Saiads, and 23 among the Kásis. The wealthy, who are the only class with the means to pay *walwar* more than once take more wives than one, either for pleasure or, sometimes, for the sake of offspring. Polygamy is occasionally forced on the poor among the Afgháns by the custom which requires that one of the surviving brothers or cousins must marry a widow.

Marriage with near relations, though not always the rule, is perferred, because the exchanges can be easily arranged, the bride price payable is less, the parties are already mutually acquainted, and their mutual relations are strengthened by the marriage tie.

Marriage ceremonies.

Among the well-to-do the bridegroom is generally about twenty-five and the bride four years his junior, while among the poorer classes both the bridegroom and the bride are generally older. In rare cases infant betrothals take place, generally among very near relations. Ordinarily, a man has nothing to say in the selection of his bride, but when his parents wish him to marry they look for a suitable girl, and the first step taken is to send a female relation to see her and to satisfy herself about her personal appearance and other qualifications. Among the poor, when marriage takes place at an advanced age, the man makes his own choice.

The girl having been approved, the father of the bridegroom with some of his relatives (*marakka*), goes to the girl's father and, if the preliminary overtures are well received, the amount of *walwar* is discussed and also the presents, which the father will at the wedding, give to his daughter. If the father of the bride consents to the match, the *walwar* is fixed, and the girl's mother or grandmother thereupon presents the bridegroom's father with a needle in the eye of which has been inserted a silk thread. Guns are now fired, sheep are killed and a feast is given to the bridegroom's party. This is the preliminary step in the betrothal and is known as the *hokra*. Among the

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Achakzais and other Taríns a *mullá* is called in at the time of the *hokra* who reads the marriage service, the bridegroom being represented by a deputy (*wakíl*). This ceremony of *hokra* is binding among all the tribes and more especially so among the Achakzais. After it has taken place, it is considered a want of good breeding on the man's part to retreat without a plausible excuse, and any one who does so is regarded with contempt. In the case of the woman, the *hokra* is considered binding except under special circumstances, such as adultery on her part or strong suspicion of it.

After about a month a portion of the *walwar* is paid, when a party of the bridegroom's relations goes to the bride's father, who presents them with a silk kerchief, the colour of which is generally green, and which has silk rosettes or silver ornaments on the four corners. This is the *kozda* or betrothal, and at this time there are again general rejoicings, dancing, etc. Among the Saiads of Quetta, the bridegroom's father presents a silver or gold ring to the bride on the day of betrothal, which is put on the index finger of her right hand.

After the *kozda*, the bridegroom is permitted to visit the bride with her mother's consent but not openly; such visits are known as *ghla gardani*, or secret intercourse. But the more regular system is the *psha khatásawal* or *gardani*, the bridegroom going with his comrades to the bride's house and presenting her with a dress (*jora*) consisting of a head wrapper (*parúnae*), shirt (*kamís*), drawers (*shalwár*) and a pair of shoes; among the Achakzais a cap (*rakhchína*) is also given. The party is feasted and returns home, but the bridegroom stays behind for a couple of days during which time cohabitation is permitted. He is then given a suit of clothing and dismissed, but may afterwards visit the girl at any time and enjoy all the privileges of a husband. If a girl becomes pregnant whilst in her father's house, the date of the marriage is expedited, and amongst the Taríns, the bridegroom has to pay a penalty to the girl's parents, the amount varying from Rs. 50 to Rs. 200. The *gardani* system is prevalent among all principal tribes in the District except the Saiads of Kiráni.

When the *walwar* has been fully paid, a date is fixed for the marriage (*nikah*), which is performed in accordance with Muhammadan rites at the bride's house; among the Achakzais, however, the bride is taken to the bridegroom's house and the *nikah* is performed there. Besides the *walwar*, the bridegroom has to supply provisions to the father of the girl for the entertainment of the wedding guests. In cases of widow re-marriage no ceremonies, except the *nikah*, are observed.

Bride price.

Except among the Saiads of Kiráni, who marry within their own septs and do not demand any *walwar*, the amount and payment of *walwar* is the most important factor in all matrimonial

arrangements. In pre-British days, money was scarce and the bride price was low, varying from Rs. 20 to Rs. 140 for a virgin, and, except the small amount required for ornaments, it was generally paid in sheep, goats, camels, cattle or arms. The present rate of *walwar* among the Achakzais is from Rs. 300 to Rs. 800; among the Taríns from Rs. 400 to Rs. 1,500; among the Chishti Saiads of Pishín Rs. 100; among the Bukhári Saiads Rs. 1,500; among the Kákars Rs. 300 to Rs. 500; and among the Kásis Rs. 400 to Rs. 500. But the amount depends on the position of the bride's family, her personal qualities, and the paying capacity, age and social position of the suitor. If a man wishes to marry above him, or an old man wishes to marry a young girl, he has to pay a higher price than an ordinary suitor, and instances are known in which Rs. 3,000 to Rs. 5,000 have been paid. It is believed in Pishín that the affluent Saiads of Karbala have been able to collect the prettiest girls in the country as their wives. The *walwar* paid for a widow is generally half the amount paid for a virgin but, in exceptional cases, when a widow is young and attractive, it is more. Deferred dower, or *haq-i-mahr*, is theoretically recognised, the amount varying according to the position of the parties. The amount is usually small, the minimum in Quetta being as low as Rs. 2-10-0 and in Pishín Rs. 32. Among the Saiads of Kiráni Rs. 500 are promised. A curious custom prevails in parts of Pishín where the husband presents his wife as dower, with a share of the merit (*sawáb*), which he hopes to obtain after death by giving alms from his hearth (*angharai*) in his lifetime. The share given varies from one-sixth to one-third, and the gift saves the husband from the onus of giving any dower upon earth. The payment of *haq-i-mahr* is seldom claimed by the tribeswomen, as their husbands usually make them give their dower back. Prompt dower appears to be only in vogue in the Achakzai country, where the husband, on bringing his wife home, presents her with a few animals, goats, sheep, cattle or camels, which are considered to be her sole property.

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System of exchange.

Mention may also be made of the system of exchange of girls (*sarai*), which is universal among the tribes. Under this system, if there is much difference between the ages of the girls, which are to be exchanged, one being marriageable and the other not, the parents of the younger generally have to pay an additional sum in cash. Similarly an oldish man, who gets a young girl, in exchange for one of his own female relations, has to make an additional cash payment by way of compensation.

Marriage expenses and gifts.

The marriage expenses vary according to the position of the contracting parties from Rs. 100 to Rs. 500, excluding the *walwar*, most of which fall on the bridegroom's party.

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The bride's parents generally present her with a dress, and a few silver ornaments, bedding, and some articles of household furniture. A suit of clothes is also given to the bridegroom. Wealthy families present 3 to 9 dresses to the bride and more numerous and better ornaments and articles of household furniture.

Divorce.

The usual reasons for divorce are the disagreeable appearance or temper of the woman, immorality proved or suspected, and petty theft. The method of divorce is the throwing of three stones or clods of earth after the woman. The divorced woman has the status of a widow and can re-marry in her tribe, but if she is divorced for misconduct, she is not permitted by custom in most of the tribes to marry her seducer. Amongst the Achakzais, a woman can obtain a divorce if her husband is proved to be impotent. To effect, this pressure is brought on the husband by her parents through the tribal headmen. If an Achakzai woman is divorced at her own request, the husband is entitled to recover about one-third of the *walwar* paid by him. With the Taríns and Kákars, if a woman is divorced for her own fault, the husband claims compensation (*khulla*) from the man whom the divorcé marries. The amount is not more than one-third of the *walwar*. Among the Saiads of Pishín she loses her dower in such cases.

Penalties for adultery.

Before the British occupation, death was the punishment of a faithless wife caught *flagrante delicto*. This still holds good theoretically but, in practice, an injured husband is ready to salve his conscience with compensation in girls, money, etc., the amount payable varying in different tribes. No compensation is payable, if both the seducer and the woman are killed. If both escape, the woman is divorced and among the Achakzais, the compensation payable by the seducer is 12 *juga*, or girls, of whom 6 are actually given while the remainder is contributed in cash at the rate of 200 *kandahári* rupees per girl. Among the Sanatia Kákars a divorcé is allowed to marry her seducer on payment of compensation to the injured husband varying from Rs. 320 to Rs. 400. Among most tribes, however, there is no fixed rate, the compensation, which generally consists of one or more girls and some cash, being determined on the merits of each case.

The status of woman and rights to property.

The position of women is one of extreme degradation. No sooner is a girl fit for work than her parents send her to tend the cattle, besides taking her part in all the ordinary household duties. Owing to the system of *walwar* in vogue, when she reaches nubile age, she is, for all practical purposes, put up for auction sale to the highest bidder. Her father discourses on her merits as a beauty, or as a house keeper, in the public meeting-places, and invites offers from those who are in want of a wife. Even the more wealthy and more respectable Afgháns are not above this system of thus lauding the human

wares, which they have for sale. A wife must not only carry water, prepare food and attend to all ordinary duties, but she must take the flocks out to graze, groom her husband's horse and assist in the cultivation. She has no rights in property, not even to any presents presented at her marriage, and, if divorced, she can only carry away with her the clothes she is wearing. As a widow, too, she is only entitled to a subsistence allowance from her late husband's estate.

In the household of a deceased Afghán, widows and girls are merely regarded as assets in the division of his property, and though the system is severely discouraged by Political Officers, it is no uncommon thing to find that a son is willing to hand over his mother to an applicant for her hand on the receipt of the stipulated *walwar*. The right to a deceased brother's widow, to which reference has already been made, is illustrated at the time of marriage by the bride, when brought home, refusing to enter the house until promised a present by the husband's brother.

In former days a brother, who did not wish to marry his brother's widow himself, could dispose of her in marriage to any one he chose and appropriate the *walwar*, but an appreciable change has occurred in the position of such widows, since an important decision given in November, 1892, by Mr. H. S. Barnes, then Agent to the Governor-General, in the case of Lukmán, Kákar, versus The Crown. "As regards a widow's power of choosing a husband," Mr. Barnes said, "Muhammadan Law must not be over-ridden by local inhuman and ignorant custom and, in all disputes regarding widow re-marriage brought before the courts in British Baluchistán or the Agency Territories, the courts of law should follow the provisions of Muhammadan Law, in so far as that law gives to widows full liberty and discretion to marry whom they please; and no case of the kind should be committed to a *jirga* for settlement without a clear direction that, on this point of the widow's freedom of choice, no curtailment whatever will be permitted of the liberty and discretion which Muhammadan Law allows her. The only point in which any concession to local tribal custom can be permitted, is that which relates to the payment which should be made by the new husband to the late husband's family. . . In order to put a stop to the feuds which might otherwise arise from allowing widows to marry whom they please, it is admissible for courts to settle the sum of money which should be paid to the family of the widow's late husband by the man she proposes to marry. This is the point in the settlement of these cases which may usefully be made over to a *jirga* for decision." This decision was re-affirmed by Sir James Browne in June 1895, in the case of Musammát Miryam, Yásínzai, when an order of the Political Agent, Quetta, debarring

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the widow from marrying any member of the Karozai, Sulaimánzai and Bárézai sections was quashed, and the woman was permitted to marry any one she chose, subject to the payment of *walwar*. The decision is not always followed by the tribesmen, but the women are well aware that they can appeal to the courts. The scope of the decision was extended in 1903 by the Kási headmen of Quetta, with one exception, agreeing to demand no *walwar* in future for widows on re-marriage.

Inheritance.

Among most of the tribes the women are allowed no share in inheritance, but recently (1905) some of the Bázai Kákars of Quetta and the Sanatia Kákars of Pishín, have realised that their custom is contrary to *shariat*, and have agreed to follow the Muhammadan Law and give them the share of the inheritance allowed by that law, reserving to themselves, however, the right to pay a woman cash compensation for her immoveable property in case of her marriage in another tribe. This is also the custom of the Kiráni Saiads. It remains to be seen whether any general change takes place in the tribal custom in this respect. Inheritance among males is governed by tribal custom, but is based on the general principles of the *shariat*.

Language.

Language, at the census of 1901, was recorded only in the case of 29,447 persons, who were censused on the standard schedule.* Of these only 3,366 spoke vernaculars of Baluchistán; Punjabi was spoken by 11,836 persons and Urdu by 6,189. The number of persons speaking European languages was 3,396. Of languages common in the Bombay Presidency, Sindi had 1,635 speakers, Marathi 938, and Gujráti 410. Owing to the number of places from which the alien population is drawn, Quetta town presents great variety as regards the languages spoken in it; there is hardly a widely spoken vernacular of India of which some speaker cannot be found. The language of the courts is Urdu, and a modified form of it, originally introduced in the District by officials who came in the early days of the British occupation from the Déraját, is making way among the indigenous population, especially in the villages round Quetta.

The principal dialects spoken by the indigenous population are Bráhui and Pashtú. The former is limited to the Bráhuis, who occupy the southern part of the Quetta valley and Shorarúd; Pashtú is used by the Afgháns, who form over 77 per cent. of the rural population. Persian is spoken by Kandaháris and Hazáras and also by the leading men among the Achakzais and Saiads of Pishín, while a corrupted form, known as Dehwári, is spoken by the Saiads of Kiráni and some of the Kási Afgháns. The medium of correspondence, except in the case of official documents, is Persian.

* *Census of India*, 1901, Vol. V-A, table X.

The following statement shows the distribution, by races and tribes, of the indigenous inhabitants of the District :—

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Races, tribes and castes.

Afgháns.	Kákars	35,452
	Taríns (including Achakzais)	26,691
	Kásis	1,064
	Ghilzais	2,102
	Others	829
	Total	**66,138**
Saiads		7,836
Baloch		656
Bráhuis		6,911

Afgháns, including Saiads, it will be seen, are by far the most numerous, comprising 91 per cent. of the total, and Bráhuis come next with 8 per cent. of the aggregate; the number of the Baloch is insignificant.

Among the non-indigenous population, the races and castes most numerously represented in 1901 were Aroras 2,228; Chuhras 1,917; Europeans and Eurasians 3,404; Jats 2,793; Khatris 1,229; Marathas 580; Rájpúts 1,107; Sheikhs 1,778; and Tarkháns 613. Owing to the circumstances, under which the non-indigenous population comes to Baluchistán, either in government or private service or as traders, and the more or less temporary character of their sojourn, it will not be necessary to deal with them further in this section which will be confined to a description of the chief indigenous tribes.

Tribal constitution

Before dealing with each tribe, however, it is necessary to indicate what an Afghán tribe is. It must be borne in mind that it differs, in certain respects, very materially from a Bráhui or Baloch tribe, but as the majority of the population in the District is Afghán, it is unnecessary to discuss this question in detail here. The subject is dealt with in the Baluchistán Census Report for 1901.

Theoretically, an Afghán tribe, is constituted from a number of kindred groups of agnates. That is to say, descent is through the father, and the son inherits the blood of the father. The groups comprising the tribe are divided into a multiplicity of sub-divisions, which it is almost impossible to follow, but for practical purposes four are in general use, the *kaum* or main body, the *khel* or *zai* representing both the clan, a group generally occupying a common locality, and the section, a group whose members live in close proximity to one another and probably hold common land, and lastly the *kahol*, a family group united by kinship.

Affiliated with a good many tribes, however, are to be found a certain number of alien groups known as *mindún* or *hamsáyah*. Some instances of these are given in the account of the tribes which follows. In these cases the test of kinship does not apply, and such groups, families, or individuals are

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united to the tribe by common good and common ill. In other words, common blood-feud is the underlying principle uniting a tribe, but the conception merges into the fiction of common blood, i.e., connection by kinship.

The Afgháns are not organised under a common leader, as is the case with Baloch or Bráhui tribes, to whom the tribal officers such as *mukaddams*, *wadéras*, etc., are subordinate, but their more democratic spirit chooses a leading man in each minor group. Heredity is always an important factor among the Baloch, but with Afgháns there is frequent chopping and changing, the weak giving way before the strong and the apt before the inept. Hence, individuality has far greater scope among Afgháns than among the surrounding races, but the retention of influence, once acquired, frequently depends on exterior support, such as that of Government, rather than on that of the tribesmen themselves. An instance is that of Abdul Hamíd Khán, who was the recognised head of the Achakzais up to 1889. On the withdrawal of his levy service, he lost most of his influence. Similarly, the Batéza Taríns held the governorship of Pishín before the British occupation, but Khushkyár, the present representative of the last governor in the direct line, is not recognised by the Taríns generally.

KAKARS.

The total number of Kákars in the District in 1901 was 35,452: males 19,308, and females 16,144. They represent 5 per cent. of the total number of Afgháns, and 42 per cent. of the total indigenous population of the District. The Kákars are Ghurghusht Afgháns, their progenitor Kákar being a son of Dáni and grandson of Ghurghusht son of Qais Abdul Rashíd. They are divided into the four clans or divisions shown in the margin, the connection between each of which is so slight that each might almost be considered a separate tribe. Included among them are some Dáwis

Sanzar Khél ...	6,728
Sanatia ...	13,097
Targhara ...	13,356
Sargara ...	1,413

who are descended from Dáwi brother of Kákar, and a group known as Lamar, whose origin is doubtful. The last two groups may be dismissed in a few words. The Dáwis number 201, of whom 72 are in the Quetta tahsíl and 129 in the Pishín tahsíl. The Lamars, of whom there are 476, all live in the Toba Kákari circle of Pishín. The Targharas and Sanatias are the two strongest clans in the District and are of about equal strength; the Sanzar Khéls follow; the number of Sargaras is small.

The Targhara clan.

Numerically, the Targharas are the strongest division of the Kákars in Quetta-Pishín, numbering 13,356: males 7,374, and females 5,982. With the exception of 294, who reside in the Quetta tahsíl, the whole of them are to be found in the Pishín tahsíl, occupying the Barshor valley, Toba Kákari and a part of the Kárézát-i-Kákari circle. Their lands are limited an

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they are comparatively poor. Their principal sections in Pishín are shown in the margin. The notorious Háji Khán who took so prominent a part in the proceedings at Kábul during the first Afghán war and who built the three forts which are known by his name, one at the head of the Kwat glen on the Toba plateau, another in Barshor, and the third in the Sarwésht circle of Pishín, belonged to the Ahmad Khél section of the Targharas.* The leading men now (1905) are Maliks Habo, Lájwar, and Shírín, Ahmad Khéls; Sulaimán and Zarín, Bárakzais; and Muhammad Saido, and Zaríf, Sulaimán Khéls.

Ahmad Khél ...	3,077
Bárakzai ...	6,643
Sulaimán Khél	3,055

Amongst the Ahmad Khél branch of Targharas, the Akhtarzai and Khudsi are aliens. The former are Akhtarzai Sanzar Khéls, who migrated to Toba some ten generations back. They now hold lands in Ulgi and Bachak in the Toba Kákari circle. The latter live in Marsínu and Pasta in the same circle, and are said to be the descendants of an orphan lad, who came from India with Fáil, son of Ali, Ahmad Khél. The Patazai Hasanzais of Nigánd are a sacred group (*pír khána*) of the Ahmad Khéls, and a similar position is held by the Shádízai sub-section (16 families), who live in War Zarobe. The Bárakzais pay the Shádízais one *kása* of grain at the spring harvest, and the flock owners give them all the male kids other than those that are black. The *pír khána* of the Sulaimán Khéls is the Jamálzai branch (5 families), which lives in Barshor.

The Sanatia clan.

The Sanatias are only slightly less numerous than the Targharas and number 13,097: males 7,132, and females 5,965, their principal sections in the District being as shown in the marginal table.

Bázai	3,406
Isakhél, including	
Yasínzai ...	4,115
Mehtarzai ...	1,065
Mallazai ...	512
Pánézai	2,047
Sárangzai ..	997
Shamozai ...	854

The Bázais occupy the skirts of Takatu and the Aghbarg valley; the Isa Khéls hold the Hanna valley and parts of the Kárézát-i-Kákari and Lora Kákari circles of Pishín; the Mehtarzais live in the Lora Kákari circle; the Pánézais in the Lora and Kárézát-i-Kákari circles; the Mallazai at Rod Mallazai in the Kárézat-i-Kákari circle; and the Sárangzais in the Hanna valley and the Kárézát-i-Kákari circle. The leading men among the Bázais are (1905) Khán Sáhib Majíd and Khán Sáhib Háji Baha-ud-din; among the Isa Khéls, Maliks Abbás Khán, and Lawang Khán; among the Mehtarzais, Malik Dil Murád; among the Pánézais, Khán Sáhib Háji Hárún; among the Mallazai, Abdul Hamíd; and among the Sárangzais, Maliks Mobín and Mazár.

* For further details see Chapter I, Archæology.

POPULATION.

Instances of the admission of aliens are not wanting among the Sanatia Kákars. Thus the Alamzai branch of the Karozai Yásínzai Isa Khéls living in the Hanna valley are the descendants of one Maté, a Sanzar Khél; and the Bábarzai, a branch of the Sulaimanzai Yásínzai Isa Khéls, are said to be the descendants of a Hindu convert to Islám.

Among the Sanatia Kákars, the family of Sáhibzáda Fakír Muhammad Ján who lives at Sáhibzáda Káréz in the Kuchlák circle of the Quetta tahsíl was formerly held in much respect, but his influence is now on the decrease (1905). .Its power was established by one Sheikh Záda, a man of great sanctity, the ancestor of Fakír Muhammed Ján in the sixth degree, who migrated from Kamchughai in the Hindubágh tahsíl of the Zhob District, and whose descendants gradually acquired a good deal of property including two *kárézes* in Kuchlák, the revenue of which has been remitted for the term of the Quetta Settlement. The Sáhibzádas also hold their half of the Shér Khán Káréz and 5 acres of land under the Shébo Canal free of revenue.

Sanzar Khéls.

The Sanzar Khéls of the District belong to the descendants of Sanzar Nikka, the majority of whom still live in Zhob. In 1901, their total number in the District was 6,728: males 3,606, and females 3,122, the principal section being the Parézún (3,207) of whom 3,188 were enumerated in the Pishín tahsíl. They occupy parts of the Gulistán and Kila Abdulla circles and their leading men are, Malik Muhammad Ján, Abdul Rahmánzai, and Malik Majlún, Massézai.

The Sargara clan.

The Sargaras are divided into three main sections, viz.: the Sam khél, Mandázai, and Hárúnzai; most of them live in the Hindubágh tahsíl of Zhob. Those living in Quetta-Pishín number 1,413, of whom 714 are in the Quetta tahsíl and 699 in the Pishín tahsíl. They are alleged to have separated from the parent stock, under the leadership of one Mián Khán, in search of pasture, and lived for some time in Haidarzai, whence they moved to Kuchlák. Mián Khán is said to have accompanied Mír Nasír Khán I of Kalát to Persia and to have been granted one-fourth of the Kuchlák spring in recognition of his services. All the three principal sections are represented in the District, but the most important one is the Mandázai, living in Kuchlák, the principal man being Malik Sultán Muhammad who belongs to the Alyázai branch. The Mandazais of Quetta-Pishín recently attempted to renew their connection with the Hindubágh Sargaras but the latter refused to have anything to say to them, a fact which is of interest, as showing the fission, which is continually taking place among the tribes.

Physical and moral characteristics.

Anthropometrical measurements, which were made of the Kákars for the census 1901, showed that they had broad heads, fine to medium noses, and that their stature was either above the mean or tall.

The following were the average measurements* of those examined :— POPULATION.

Average Cephalic index	...	...	81·9
Average Nasal index ...	...	...	69·6
Average Stature	..	...	.. 1683· m.m.
Average Orbito-nasal index ...		...	116·6.

The tribe is, on the whole, peaceful and devoted to agricultural pursuits. The Kákars have a poor reputation for bravery among other Patháns, though they can be troublesome at times. A local proverb says: "Whenever you see a Kákar, hit that Kákar with a stick, expel him from the *masjid* and you will see no mischief." Their dirty personal habits are alluded to in another proverb, which speaks of them as "besmeared with filth." The standard of morality of the poor is rather low.

Historical.

In 1842, they joined the Achakzais and Taríns at the engagement of Haikalzai and afterwards opposed the British troops at Murghi Kotal when returning to Quetta. Bellew, in 1872, mentions the trouble which the Bázais had given the Khán of Kalát by their raiding expeditions towards Mastung, and in 1877 the cattle raids which they committed ultimately led to the occupation of the Quetta fort. Some of them gave trouble after the battle of Maiwand in 1880, especially the Pánézais of the Sibi District, who were subsequently defeated in a skirmish near the Chappar rift. Since then the Kákars have generally behaved well and they now hold among others the levy posts of Sábúra, Barshor, Churmián, Khánozai, Gwál, Khánai, Fuller's Camp, Bostán, Jalogír, Yúsaf Kach, Burj Azíz Khán, Dínár Káréz, Ghazaband pass, Murghi Kotal, Sra Khulla and Hanna pass.

The Taríns.

The Taríns are Saraban Afgháns, the descendants of Tarín, son of Sharaf-ud-dín, son of Ibráhím, son of Qais Abdul Rashíd. According to the tradition, Tarín had four sons: Spín Tarín, Tor Tarín, Zhar Tarín and Bor Tarín. The term Abdál, however, gradually superseded that of Bor Tarín and came into special prominence when Ahmad Sháh, Abdáli, commonly known as Durráni, began his career of conquest. It is still used, though sparingly, for the Achakzais, who have become localised in Toba and are regarded as a separate political unit from the rest of the Taríns. This is also the case with the Tor and Spín Taríns, who, so far as common good and ill is concerned, have no connection with the Achakzais or with one another.

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* See *Census of India*, 1901, Vol. I, *Ethnographical Appendices*. An explanation of the method of measurement will be found at p. 6 of the Report.

POPULATION.

The total number of Taríns enumerated in the District in 1901 was 26,691, of which 20,345 were Abdáls. The latter included the sections shown in the margin. There are but few Spín Taríns, their numbers amounting only to 135, of whom 81 live in the Pishín tahsíl. The Tor Taríns numbered 6,172: males 3,116, and females 3,056.

Achakzai	...	19,008.
Bádízai	...	573.
Núrzai	...	427.
Popalzai	...	168.
Bárakzai	...	16.

The Tor Taríns.

Tor Tarín is credited by local tradition as having had a son, Bábo, who in turn had two sons Ali and Hárún. The descendants of Ali are now known as the Alízai, while those of Hárún are divided into four principal sections, viz.: the Abúbakar, the Núrzai, the Ségi and the Malikyár. The strength of each is given in the margin. The Batézais (409), a sub-section of the Abúbakar, claim social superiority among their fellows, owing to the fact that they were the hereditary governors of Pishín under Persian and Afghán rule.

Abúbakar	...	2,427.
Alízai	...	1,709.
Ségi	...	996.
Núrzai	...	503.
Malikyár	...	493.

According to local tradition, the Malikyár section first established the power of the Taríns in Pishín in the fourteenth century by conquering the Zamands. At this time the Taríns were living in the country between Kánr Mehtarzai and Nigánd and in Barshor. They were assisted in the conquest of Pishín by the Kákars and Saiads and a pitched battle occurred at a place still known as Jangzáe in which the Zamands were defeated. Jangzáe is near Manzakai in the Alízai circle of Pishín. The Malikyár now set themselves up as governors, and one Baté is said to have been sent to Delhi to obtain confirmation of the office, but obtained a *sanad* in his own name and, on his return to Pishín, defeated the Malikyár and obtained the post for himself. He was succeeded by his son Khwája Khizar, the latter being followed by his son, Kála Khán, and Kála Khán by his brother, Shéram Khán, as governor. The latter is said to have been a contemporary of the Emperor Sháh Jahán (1628 to 1658) and appears to have had to abandon his post to Tamáz Khán, a Mughal and brutal tyrant. On the latter's death, however, the Taríns appear to have regained their power, the succession being disputed by Muhammad Khán and Ahmad Khán, sons of Kála Khán. Ahmad Khán, whose mother was a Baloch, called in Féroz Khán and Dínár Khán, Baloch, to his aid, but the latter took advantage of the quarrel to conquer the country for themselves. They were eventually ousted by the Taríns under Bahádur Khán son of Muhammad Khán, whose son, Zamán Khán, now made peace with Karam Khán, grandson of Ahmad Khán and presented him with half of the country. Zamán Khán was succeeded by Sád Ullah Khán,

and Karam Khán by Pakár Khán. Pakár Khán was a contemporary of Ahmad Sháh, Durráni, and appears to have done much to extend Tarín influence, as a result of which Ahmad Sháh conferred on him the title of *Amír-ul-umrá*. On Pakár Khán's death his son, Buland Khán, was nominated by the Sadozai rulers as their deputy in Pishín, and he was succeeded by his son, Páind Khán. The latter, however, fell out with the authorities at Kandahár and was replaced by Gul Muhammed Khán, Ahmad Khél Kákar brother of Háji Khán. With Páind Khán the Tarín power in Pishín disappeared, and his grandson, Khushkyár, *Malik* of Bazar-i-Nau, has now (1905) little or no influence, as already mentioned. POPULATION.

The leading men among the Tor Taríns in Pishín (1905) are Khán Sáhib Iskán Khán, Malik Arsala, and Malik Pakúr, Khudádádzais, and Malik Báz, Haikalzai. The Tor Taríns own the Surkháb and Sarwésht circles; Malézai in Band Khushdil Khán; Batézai under the Shébo Canal; Manzakai, Bagyár, Alízai, and Sémzai in the Alízai circle; and Ségi. Their principal occupation is cultivation but many of them go to India for trade.

The Tor Taríns are said to be not as strong physically as the Kákars or Achakzais, and their morals leave a good deal to be desired. Owing to the visits many of them have paid to India and the knowledge of law which they have thus acquired, they are more litigious than their neighbours. Some of them were in the force which defeated General England in 1842 at Haikalzai. Several instances are to be found in which they have given a share in land and water to outsiders on condition of the latter sharing in good and ill with them. Thus the lands now occupied by the Karbala Saiads, are said to have belonged to the Khánzai Taríns, who made them over to the Saiads in return for bearing a portion of the burden entailed by the introduction of the *gham-i-naukar* system. The Parézún Kákars, again, are said to have obtained the lands now comprised in Badwán, Kulalzai, Popalzai, Abdur Rahmánzai, Hamránzai, and Maghdozai in return for help given in the fight with the Zamands, and the Ismáilzai Sanzar Khél Kákars whose present *malik* is Mír Báz Khán, and whose village in the Ségi circle is known by that name, were given lands for assisting the Taríns against the Achakzais.

Achakzais.

Owing to their connection by blood with the ruling family of Afghánistán, to their position athwart the border of the District, for many of them live in Afghán territory, and to the recent date at which they have been brought under control, the Achakzais are politically one of the most important tribes in the District. According to Hyát Khán's history of Afghánistán, from their progenitor Bor Tarín, otherwise known as Abdál, are descended two main divisions the Zirak and the Panjpái. The Zirak include the Popalzai, Bárakzai and

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Alakozai, and the Panjpái consist of the Núrzai, Alízai, Isshákzai, Khakwáni and Maku. The Achakzais are, in strictness, a branch of the Bárakzai but Ahmad Sháh, Durráni, himself an Abdál, fearing the growing numbers of the Bárakzai, separated them from the parent stock, since which time their organization has remained distinct. The Muhammadzai Amírs of Afghánistán are their collaterals, descendants from the common Bárakzai ancestor in another line through the Umar Khánzai.

The total number of Achakzais in the District in 1901 was 19,008, of whom 13,039 were enumerated in the Chaman Sub-division, 5,952 in Pishín and 17 in Quetta. The tribe consists of two main clans, the Bádínzais and the Gujanzais. The Bádínzai numbered 4,993 in 1901; the strength of each of the remaining sections, which all belong to the Gujanzai, is shown in the margin.

Ashézai	...	2,819
Hamídzai	..	3,732
Malézai	...	1,660
Nasratzai	...	3,978
Usmánzai	...	27

The tribe occupies the western part of Toba, known as Toba Achakzai and the Khwája Amrán in the Chaman Subdivision; and Arambi Kákozai, Pír Alízai, Jangal Pír Alízai, Kila Abdulla, Gulistán and Inayát-Ullah Káréz in Pishín, but their country is not confined to British territory, and extends into the Nárín hills beyond Murgha Chaman and to the north of Kandahár while south-westward it meets the Baréch of Shoráwak. Of the sections in Quetta-Pishín, the Bádínzais occupy Iskám Kánr, Arambi, Chinár and the Gwál valley in Toba; the Ashézais part of the Sahará, Spéshlún and Tabína; the Hamídzais, the Táshrobát and adjoining valleys; the Nasratzais Farákhi; and the Usmánzais the country near the Ghwazha pass.

In physique, the Achakzais are some of the finest Afgháns in Baluchistán, and they are extremely active and hardy. Their ignorance, however, is extreme, and proverbial throughout the country-side. The local proverb says: "Ignorance spent the night with the Shamsozai,* reached the Ismáílzai Saiads at noon, and was lost among the Kákars of Toba." The tribesmen have been less influenced than others by the British occupation, and their predatory habits are still not fully checked. As horse or cattle thieves, the Kákozai and Ghaibézai sub-sections of the Bádínzais are difficult to excel, but their marauding expeditions are now (1904) largely directed to the Afghán side of the frontier. Of their predatory habits, Elphinstone wrote in 1814: "Their Sardár has more power than most of the Durráni chiefs, but even that power, with his utmost exertions, is not sufficient to check the predatory spirit

* The Shamsozai are Bádínzai Achakzais.

of his tribe. No travellers can enter their country without being plundered, and they often make night excursions to steal. Skill in theft and boldness in robbery are great qualities among them; a great deal of the conversation of the young men turns on exploits of this kind, which they have performed or projected. Their robberies, however, are never aggravated by murder." In recent times the internal relations of the tribe have been much disturbed by intersectional feuds and dissensions. POPULATION.

Most of the Achakzais are landowners, who till their own lands, but the Malézais, Ghaibézai Bádínzais, and the Alízai, Adrakzai and Salézai sub-section of the Nasratzais also own flocks. The Alízais and some of the Hamídzais are engaged in trade with Afghánistán importing *ghí*, wool and almonds, and exporting piece-goods and leather goods, while the Shamakzai, a sub-section of Ashézais, supplement their means of livelihood by selling wood in Kila Abdulla. Some of the Kákozais and Ashézais are also engaged as tenants in the Tarín and Saiad villages in Pishín.

The Achakzais gave trouble in the Khojak pass when the Army of the Indus passed through it in 1839, but a little later a good many of them were enlisted in the irregular force, which was raised at Kila Abdulla. At this time, two of their leading men were Háji Sarbuland Khán, son of Yár Muhammad, and Abdulla Khán the founder of Kila Abdulla Khán. Háji Sarbuland Khán and Sáléh Muhammad Khán, his nephew, espoused the cause of the restored Sadozai dynasty, and were true to the British to the end of the war. Abdulla Khán took the Bárakzai side, and was one of the most vehement opponents of the British in Kábul; he and his two sons were killed at the battle of the 23rd of September, 1841. Some of his descendants, cousins of the Arzbégis of Kila Abdulla, are still employed in the Amír's service at Kandahár and Kábul. The Achakzais again proved troublesome in the early stages of the second Afghán war in 1878-80, and in September, 1880 a considerable force under General Baker marched from Chaman for the highlands of Toba, the inhabitants of which, in addition to raiding in Pishín, had attempted to close the Khojak pass and had cut and carried off much of the telegraph wire. They submitted and were given service for the protection of the posts between Gulistán and Chaman across the Khojak pass. This service was extended in 1881, and a pension for life was conferred on their chief, Háji Sarbuland Khán. Complaints of Achakzai depredations in 1882 led to the opening up of negotiations with the *maliks* of Toba and the despatch of a force to visit that tract and in 1883, the levy service was redistributed. In 1895 it was decided to take revenue from the Achakzais, a subject which will be dealt with in the section on Land Revenue, and in 1895-6 that part of their country now within Quetta-Pishín

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was finally definitely separated from Afghánistán by the Afghán Boundary Commission.

As usual in Afghánistán, the Achakzais appear to have had no recognised chief among themselves, but it was usual in Afghán times to appoint one of a particular family, generally the heads of the Ahmadzai sub-section of the Hamídzai section, to supervise the tribe on the part of the government, and probably to be responsible that their notoriously predatory propensities were kept within moderate bounds. The Jalézai, another sub-section of the Hamídzais, contained an elder branch, the Barkhurdár Kahol, and a younger branch, the Arzbégi Kahol, both of which attained considerable power in the time of the later Sadozai rulers, the influence of the Barkhurdár Kahol being principally exercised on the Afghán side of the border, and that of the Arzbégi Kahol on the Pishín side. The Barkhurdár Kahol is now (1905) represented by the Achakzais of Ináyat Ullah Káréz, and the Arzbégi Kahol by those of Kila Abdulla and Gulistán. The leading representatives of the Barkhurdár Kahol in Ináyat Ullah Káréz are (1905) Muhammad Hasan Khán, who is in receipt of a personal allowance and enjoys a revenue-free grant; Jalál Khán and Núr Muhammad Khán. They have, however, lost most of their influence.

The leading men among the Arzbégis are K. B. Ghulám Haidar Khán in charge of the Toba Levies; Abdul Hamíd Khán in charge of the levies at Gulistán; Táj Muhammad Khán; and Abdus Samad Khán, a deputy inspector in the Police. They hold several revenue-free grants.

Muhammad Aslam, Arzbégi, a son of the notorious Abdulla Khán, to whom reference has already been made, appears to have been officially considered chief of the Achakzais for some years previous to the British occupation and he was subsequently so recognised by the British authorities. But, after the troublous time of 1880, it was found that Muhammad Aslam and his sons were quite unable to manage the Achakzais, and Abdul Hamíd Khán, Arzbégi, son of Amír Buland Khán and nephew of Sarbuland Khán, was temporarily installed as chief of the tribe. On the abandonment of Kandahár, however, Háji Sarbuland Khán and his family removed to Pishín and he assumed the chiefship. The latter's family had long been at variance with the Abdulla Khán branch of the Arzbégis. Háji Sarbuland Khán continued to administer the tribe till 1883, when he resigned, and Abdul Hamíd Khán was once more restored as head of it.

The arrangement continued up to 1889, when it was found that Abdul Hamíd's men had refused to assist in recovering property and to follow and capture offenders and it was decided that the best way to work the tribe would be directly through *maliks* of sections without the intervention of a *Khán*.

The service was, therefore, redistributed, Abdul Hamíd Khán's position was much reduced and that of Ghulám Haidar Khán, son of Muhammad Usmán Khán and cousin of Abdul Hamíd Khán, was enhanced and he was charged with more responsibility. Direct control over the Achakzais of Toba has since then been extended and Ghulám Haidar Khán is largely used in working them though this is contrary to the original intention of working direct through headmen of sections; the Achakzais in Pishín are controlled by the local officials direct.

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Other leading men among the Achakzais in Pishín, who do not belong to either the Barkhurdár or Arzbégi Kahol, are Malik Agha Píralízai, Malik Páind, Malik Ayúb Bádínzai, Khushál and Khashang, Kákozai. Among men of influence in the Chaman Sub-division, may be mentioned, Maliks Pára Dín Khán, Ashézai; Pakár Khán, Malézai; Samundar Khán, Alízai; Wali Muhammad, Muhammad Umar and Táj Muhammad, Hamídzais; and Akbar, Bádínzai; all of whom are in receipt of allowances from the Achakzai levy service.

The Kásis.

The Kásis or Kánsis belong to the Saraban division of the Afgháns, and in 1901 numbered 1,064: 528 males, and 536 females, the number of adult males being 244. Kási was a son of Kharshbún, and one of his brothers is said to have been Zamand, the progenitor of the Zamands of whom mention has been made in the account of the Tor Taríns. The local traditions of the Kásis assert that their seven sections migrated from their home round the Takht-i-Sulaimán about seven centuries ago, and made their first settlement at Samli, a village in the Kuchlák circle of the Quetta tahsíl, the site of which is still marked by a mound. Hence they spread into other parts of the Quetta tahsíl. They are divided into seven sections as detailed in the margin. To these should be added Kotwál (39), the members of which were included among the Ahmad Khánzai at the Census. The Katír (106) and Samli (59) hold land jointly with the Kásis and share in good and ill with them, but the first are said to be of Kákar and the second of Músa Khél origin.

	Persons.
Achozai ...	... 74
Ahmad Khánzai	... 141
Akázai	... 366
Badázai ...	... 129
Gadazai ...	... 17
Mírzai	... 87
Samungli ...	... 80

The leading families among the Kásis are the Arbáb Khéls. The senior branch is the Ahmad Khánzai, founded by Ahmad Khán, from whom Arbáb Badal Ján of Ahmad Khánzai is thirteenth in descent; his nephew Khán Bahádur Arbáb Shér Zamán is now (1905) an inspector in the Quetta levies. But at present the descendants of Masti Khán, Akázai, who live in the Kási village, have acquired much wealth and consequently more influence. Among them Khán Bahádur Arbáb Khudádád Khán, and Khán Sáhib Malik Wazír Muhammad, both of whom

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are members of the Quetta Municipal Committee, are the leading men. Arbáb Karam Khán, a brother of Khudádád Khán, is a náib tahsíldár.

Though numerically insignificant, the Kásis have come into prominence since the arrival of the British, owing to the proximity of most of their land to Quetta. In former times they suffered much from the attacks of the Kákars on the north, and the Bráhuis on the south. They paid revenue to Ahmad Sháh, Durráni, and in the time of Mír Nasír Khán I, a lump annual assessment of 300 *kharwárs* of wheat, 300 *kharwárs* of barley, and 3,000 rupees in cash was assessed upon them. The A'kázai and Ahmad Khánzai Arbábs enjoyed certain privileges, in compensation for which an annual grant of Rs. 1,800 was sanctioned in 1894-5 in perpetuity, details of which will be found in the article on "Land Revenue Assignments."

The Kásis have an indifferent reputation among other tribes for bravery, trustworthiness and generosity. The absence of the two last qualities is proverbial. "Though a Kási become a saint, he will still retain a vein of the Devil," "Misfortune to the man, who puts his trust in a Kási," "The will of God, but the act of a Kási," and "To get what a Kási owns, you must employ either force or theft," are common sayings.

Saiads.

The Saiads in the District number 7,836 : 3,855 males, and 3,981 females, the number of adult males being 2,168. Of this total, 7,105 live in the Pishín tahsíl and 716 in the Quetta tahsíl. To this number may be added 531 Mashwánis: 276 males, and 255 females living in the Shorarúd valley, who were classed as Afgháns in the census returns, but claim to be Saiads.

The Saiads consist of a number of groups and cannot accurately be described as a tribe. True Saiads are the descendants of Fátima, the daughter of the Prophet and wife of Ali. The descendants of Ali by other wives are designated as Ulwi Saiads by courtesy. In habits, physique, etc., there is little to distinguish them from Afgháns, and not infrequently they are classed as such. In Afghán times they enjoyed great influence, owing to their descent, and local governors seldom dared to assess them to revenue. For political reasons this system of exemption has been continued under British administration and most of the lands of the Bukhári and Chishti Saiads are still revenue free. Their power among the people is considerable, but is not so great as it used to be. Some of their leading men sit on the *jirgas*, but their influence is not otherwise utilised for political purposes. The Kiráni Saiads of Quetta and those living among the Taríns, are in fairly affluent circumstances. The Jamáli, Karbala, and Chishti Saiads of Pishín and the Mashwánis of Shorarúd, combine landowning and trade; the

Kirals, Gharshíns, and Tárans and the Chishtis of Quetta chiefly depend on their lands. The Chishtis and Tárans receive offerings from the people in the shape of *thuk* or *thuka;* for this purpose, the Chishti Saiads extend their beat into the Sarawán country in Kalát and to Kach, Kowás and Hamadún in the Sibi District. The Bukhári Saiads are the spiritual leaders of the Taríns, while the Tárans hold the same position in respect of the Kákars.

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The Bukhári Saiads (5,528), are by far the most numerous in the District and represent 71 per cent. of the total number. Their principal sections are shown in the marginal table. They live in the Haidarzai, Shébo Canal and Alízai circles, and at the Yásínzai village in Band Khushdil Khán, at Tor Khél in Kila Abdulla, and at Kili Bakho in the Gulistán circle of the Pishín tahsíl. The Bukhári Saiads claim descent from Saiad Dur Jamál, who passed through Pishín with his brothers, Saiad Jalál, Saiad Dalél, and Saiad Balél, on his return from a pilgrimage to Mecca in the fourteenth century, and married the daughter of one Hárún, Tarín. The Taríns are said to have eventually given Saiad Jamál's descendants the proprietary right in one-fourth of their land. The social status of the Shádízai section is superior to that of the rest, as their ancestor was Dur Jamál's eldest son, and they are given precedence in offering prayers. The principal men among the Bukháris are: Saiad Muhammad Ján Agha, Saiad Muhammad Hasan Sháh, and Saiad Sháh Alam.

Ismáílzai	745
Shahézai	683
Huramzai	528
Shadízai	500
Ibráhímzai... ...	450
Gangalzai	431
Hajízai	377
Yásínzai	368
Hajábzai	164

As a consequence of the shelter, which the Ismáílzai Saiads of Kili Saiad Bakho gave to a fanatic, both before and after his commission of a fanatical attack on Lieut. Robertson on March 18, 1892, their revenue-free grant of land and grazing tax was resumed.

The other groups of the Saiads enumerated in 1901 are shown in the marginal table. The Gíláni or Jíláni are alleged to be the descendants of the famous Shaikh Abdul Kádir, Jíláni, who was born in 1077 A.D. and died in 1164 A.D. and whose tomb is in Baghdád. The Kiral or Karal are in possession of a *sanad* from the Amír of Afghánistán, in which they are described as Ulwi Saiads. Their lands are situated near the Afghán boundary and are partly in British and partly in Afghán territory; in Pishín they own the Zhar Kach village in the Toba-Kákari circle. The Karbala Saiads are said to be the descendants of a Saiad child

Gíláni or Jíláni ...	35
Kiral or Karal ...	176
Karbala	885
Kharshín or Gharshín	312
Maudúdi or Chishti	311
Quréshi	51
Táran	458
Mashwáni	531

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whom Hárún Tarín, whose daughter married Dur Jamál, took under his protection. They occupy the village of the same name in the Surkháb circle of Pishín and, owing to their trading proclivities, are some of the wealthiest men in Pishín. The Kharshín or Gharshín are descended from one Saiad Isháq, by a Shíráni mother. They own land at Chashma Gharsín in Kudín village in the Kárézát-i-Kákari circle in Pishín, and also in the Músákhél tahsíl of the Loralai District, where their headman is Khán Sáhib Saiad Mehr Sháh.

The founder of the Chishti group was Khwája Maudúd, who was born in 1039 A.D. and died in 1133 A.D. at Chisht, a suburb of Herát. Khwája Muín-ud-dín, who flourished in the twelfth century and whose shrine is in Ajmér was a Chishti. A few families live in Manzakai in the Pishín tahsíl, where they have been given the proprietary right in a sixth share of their land by the Alízai Taríns. The Chishti Saiads of Kiráni in the Quetta tahsíl claim as their ancestor Khwája Nasrat-ud-dín *alias* Shál Pírán, whose shrine lies close to the Quetta fort, and who is stated to have left Manzakai for Quetta about 200 years ago. His grandson, Wali, settled in Kiráni. They are said to have rendered some service during the first Afghán war, their leading man at that time being one Mubárak Sháh.

The principal men among them receive allowances from the levy* service. Saiad Lutf Ulla Sháh who was seventh in descent from Nasrat-ud-dín, accompanied Mír Nasír Khán I, of Kalát to Persia and was rewarded, on his return, with the revenue-free holdings of Chashma Sheikh Mánda and Sádiq Káréz in the Quetta tahsíl and with two *angusht* of water at Dádhar. The latter is now held by another branch of the family.

The Tárans, according to their traditions, are the descendants of Táhir *Ab-Shanás*, i.e., Táhir the water-finder, a contemporary of Mahmúd the Ghaznavid. They live in Kudín in the Kárézát-i-Kákari circle and Chungi Táran in the Barshor circle of Pishín. They receive one *kása* of grain, and a sheep or goat from every flock from Kákars.

The Mashwánis are said to be descended from one Saiad Muhammad-i-Gésu Daráz, twelfth in descent from the Prophet, and a native of Ush near Baghdád, by a Kákar wife. Besides his Kákar wife, Saiad Muhammad is said to have married a Shíráni woman, from whom are descended the Ustaránas of Loralai, and a Kiráni woman by whom he became the ancestor of the Vardak and the Hania or Maráni. They claim that their ancestors were nomads, who came from Mashwán in Arabia. The presence among them of a Ghazni Khél suggests that the group has been recruited from aliens. Their principal men are Muhammad Amír Khán of Panjpái, who receives

* Details are given in Chapter III, under "Levies."

Rs. 20 per mensem from the levy service, Shér Muhammad Khán of Muhammad Khél, Rasúl Bakhsh, Chachézai, and Faiz Muhammad, Sirkozai. They are a quarrelsome lazy people. POPULATION.

Baloch. The Baloch, who numbered 656 in 1901: 358 males and 298 females and who are scattered over the southern parts of the Quetta tahsíl, are not indigenous to the District. Nearly all of those enumerated were Rinds. The largest sections represented were Nákhézai (114) and Rahéja (185). Many of them are said to be descendants of Baloch who came with one Zangi Baloch, a contemporary of Mír Chákar, and took possession of part of the Quetta Valley, only to be treacherously murdered by the Kásis. They possess little land, but earn their living by working as tenants and flockowning. The principal man among them till 1903 was Sona Khán, a jemadár in charge of the Mián Ghundi levy post, who has since been succeeded by his son, Kamál Khán, a promising boy.

Bráhuis. The Bráhuis are all to be found in the Quetta tahsíl including Shorarúd especially in their southern and western parts. Their total strength, in 1901, was 6,911: 3,690 males, and 3,221 females, the adult males numbering 2,245. This total is composed of seventeen different tribes, the principal ones in the order of their strength being shown in the marginal table. With the exception of 457 persons in Shorarúd valley, all the rest live in the Quetta tahsíl, where they occupy the Sariáb, Kási and Nau Hisár circles. Their occupations were recorded as landholders, cattle breeders and dealers, and camel-owners and drivers. The dominant classes among them are the Raisáni and Shahwáni, whose connection with the District has been of long standing. The others appear to have been gradually attracted in search of employment. The revenue-free grants enjoyed by the Raisánis, including the Rustamzais, are mentioned in some detail under "Land Revenue Assignments."

Shahwáni ...	1,675
Bangulzái ...	866
Lehri	791
Kúrd	626
Lángav	614
Méngal	568
Raisáni	551
Zehri	356
Kambrári ...	303
Nichári	179
Muhammad Sháhi	174

The Shahwáni tribe enjoyed hereditary revenue-free rights in thirteen *kárézes* in Quetta, by virtue of a *sanad* issued by Mír Nasír Khán I of Kalát, dated 1168 H., to Háji Mír Muhammad Khán, Shahwáni, for services rendered in Persia, Makrán and elsewhere. At the time of the Settlement in 1897 it was decided that, besides the holding of the Shahwáni Sardár, holdings of certain Shahwáni headmen, in all the *kárézes* where they represented the original grantees, should be maintained free in perpetuity. The annual value of the assignments thus made was Rs. 1,104-14 per annum in 1897. Several grants were

POPULATION. also made for the term of the Settlement. Maliks Sáad-ulla Khán and Jamshér Khán are the principal Shahwáni headmen (1905).

There were 457 Bráhuis in the Shorarúd valley in 1901; males 249, and females 208, the principal tribes represented being Lángavs 56, Méngals chiefly Sumaláris 298, Nicháris 32, Raisánis 28. Some Sásolis and Pír Kánris are to be found in the locality in summer but leave it in the winter. Almost all of them are nomads, and subsist on their flocks and camels; a few are engaged as tenants.

Dehwárs. The Dehwárs are an industrious and inoffensive people, whose name is derived from the fact that they live in *dehs* or collections of mud houses. Their nucleus is undoubtedly of Tájik origin and, like the Tájiks, they all speak Persian, but a corrupted form of it. There were 273 Dehwárs in the Quetta tahsíl in 1901. Almost all are engaged in agriculture, generally as tenants.

Ghilzais. The Ghilzais are not an indigenous tribe, but a few have permanently settled in the District and acquired landed property. One of their principal men is Pír Muhammad Khán, Andar, who is in receipt of a monthly allowance of Rs. 60 and resides at Kási near Quetta. The rest are either nomads who visit the District periodically to graze their flocks and to engage in the carrying trade, or labourers and *káréz* diggers who come during the winter and return to the Afghán highlands in the spring. A few stay in Pishín for a couple of years or more at a time and are engaged in hawking, such as buying fruit and melons, etc., and retailing them in the villages, and selling wool, milk and butter. Their women-folk make fine felts for sale. Great crowds of them enter the District in the autumn and again pass through it in the spring on their annual migrations to and from India, where they go for work. They are a remarkably fine race of men, being unsurpassed by other Afgháns in stature and strength. They also differ from other Afgháns in their greater intelligence, adaptability and perseverance and they are also most enterprising traders.

The total number enumerated in the District in 1901 was 2,102: 1,278 males, and 824 females, the number of adult males being 892: of these 1,155 were in Pishín, 748 in Quetta including the Shorarúd valley, and 199 in the Chaman Sub-division. The strength of the various clans enumerated is shown in the margin.

Tarak	556
Násirs	409
Sulaimán Khél ...	351
Andar	228
Hotak	168
Tokhi	92
Kharot	82
Wardak	25

RELIGION. The indigenous population of the District may be divided into two religious denominations, Musalmán and Hindu, the number of the latter being comparatively insignificant. Of the total population of 1,14,087 persons censused in 1901, including natives of India proper, 96,600 or 84½ per cent were Muhammadans, 11,752 or 10 per cent Hindus, 3,105 Europeans

and Eurasian Christians, 338 Native Christians, 1,798 Sikhs, 151 Pársis and 43 Jews. Most of the members of denominations, other than Muhammadan, are found in the town of Quetta. POPULATION.

Christians.

Of the total number of Christians 464 were enumerated in Quetta town and 3,214 in the cantonment. As the European garrison of Quetta contributes a large proportion of the Christian population the number of the various religious denominations is a fluctuating quantity, dependent on whether Scotch, English or Irish regiments are quartered in the place. In 1901, members of the Anglican Communion were most numerous and numbered 2,558. Roman Catholics came next with 509, Methodists 162, and Presbyterians 70. Among the Eurasian community, the numbers of Anglicans and Roman Catholics were 36 in each case. The returns as regards the denomination of Native Christians were defective. Of the Native Roman Catholics, many were Goanese in domestic service with Europeans.

Christian missions.

The Missions working in Quetta consist of branches of the Church Missionary Society and of the Church of England Zenána Missionary Society. Their efforts have principally been directed hitherto to giving medical relief, and a very large number of cases are treated at their hospitals.

Few of the indigenous Afgháns have been baptised so far; the new converts chiefly consist of Chuhras from the Punjab. The Zenána Missionary Society maintains three Schools in Quetta; a boarding school for Christian girls; a school for Hindu and Muhammadan girls; and one for sweepers' children. As in other parts of the Frontier, their educational work is much appreciated. Quetta forms part of the Anglican diocese of Lahore, and of the Roman Catholic Arch-diocese of Bombay.

Islám.

The Muhammadans of the District belong to the Sunni sect. The Saiads and *mullás* alone know a little about the forms of their religion. The tribesmen generally are devout in performing their prayers at the stated times, in keeping the fasts, and in setting apart a portion of their income for *zakát* but for the rest gross superstition takes the place of religion, and there is a general belief in the intervention of ancestors and saints in the pursuits of daily life. These saints are invoked to cure diseases, to avert calamities, to bring rain, and to bless the childless with offspring. Saiads and *mullás* also play an important part, and their amulets, charms and blessings are constantly invoked. Some of them are credited with the power of bringing rain, of curing disease, of granting children, of averting rust and locusts from the crops and of exorcising evil spirits. A list of the most influential *mullás* in the District is given in Table III, Volume B.

A common superstition is that if some one calls to an Afghán or a Saiad as he is starting on a journey, he must

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sit down before going farther. If, immediately after starting a hare crosses his path, he must return home and start again. A Shádízai Malikyár Tarín will not eat butter. A Tarín or Saiad woman will not give salt to a stranger after sunset for fear that the luck of the house may be lost, and a Saiad or Tarín of Pishín will not drink water or tea at the time of the *mázígar* prayers. A Yásínzai or Bázai Kákar will not sleep under the shade of a willow tree; and among the Achakzais, a woman will not give fire to a neighbour from her hearth, whilst milk is being boiled. Butter, too, from the first milk of the season is not given to any one until the supply collected in a pot has been turned into *ghí*. No Achakzai will cut the wild fig tree, or burn it as fuel. A Píralízai Achakzai, during his periodic migration, will not admit any one, guest or relation, to his tent on the first night of his march.

There is a general belief in evil spirits and their powers of theft and the grain on the threshing floor is encircled by a line drawn with a sword, and a copy of the Korán and the naked sword are placed over it until it can be measured for division, for fear lest evil spirits should interfere.

Hinduism.

The domiciled Hindus, who are known as the Shálkoti Hindus, are few in number, almost all are of the Arora caste, and are immigrants from Dájal in the Déra Gházi Khán District, Kachhi and Sind. Their religion is a combination of idol worship, in which the shrine of Páni Náth* takes a prominent part, with a belief in the Sikh scriptures. Their religious observances were very loose in former days, but since the British occupation they observe caste more strictly.

Arya Samáj.

Arya Samáj and the Brahmo Samáj movements are almost wholly confined to the Hindus and a few Sikhs, from the Punjab, who are employed in various Government offices. The Arya Samáj in Quetta has been divided into two parties since 1893, the Vegetarian section and the College party. The former is the stronger. Weekly prayer meetings are held by both, and preachers and others occasionally come from India to deliver lectures and to collect subscriptions, the Vegetarian section remitting the money to support the Kanya Maha Vidyála (Girls' High School) at Jullundur, and the Guru Kul at Hardwár, and the College section contributing to the Dayánand Anglo-Védic College at Lahore and the orphanage at Firozepore.

Brahmo Samáj.

The Brahmo Samáj of Quetta is a branch of the Sádháran Brahmo Samáj of Calcutta and was established in 1882. The Sádháran Brahmo Samáj is described in the Census Report of India (1901) as relying on the teachings of all religious systems, but as being more uncompromising in its disapproval of ritual

* Described in Chapter IV, under Quetta town.

and set forms of worship. It rejects altogether the system of caste. It is also strongly opposed to the *parda* system, gives its women a liberal education, and allows them an equal voice in all matters of church government. It freely permits inter-caste marriages, not only in theory but in practice. The Quetta Samáj is numerically small, but its members have been the pioneers of much of the educational and social reform, which has taken place, such as the establishment of the Lady Sandeman Girls' School and the Sandeman Library.

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Occupation.

Occupations were only recorded in detail in 1901 in the areas censused on the standard schedule, and here, out of 20,152 males recorded as actual workers, 8,804 came under the head of "defence"; 2,708 under that of "personal, household and sanitary services"; 1,150 under that of "food, drink and stimulants"; 435 under that of "textile and fabrics"; 1,504 under that of "transport"; 268 under that of "wood and cane work"; 594 under that of "commerce"; 1,164 under that of "earth-work and labour"· and 1,021 under that of "administration."

Outside the towns, the "family" system of enumeration was followed, the occupation of the head of the family being assumed to be that of the remainder. The population in this case may be roughly divided into six classes by occupation: landowners, cultivators, flockowners, traders, labourers and artisans. The landowners are the most numerous class, and the other classes are recruited from among them. They include the principal tribes of the District, viz.: the Achakzais, Taríns, Kákars, Saiads, Kásis, and Mashwánis. Most of them cultivate their lands themselves, except the Saiads, some of the Taríns, and the Kásis, who employ tenants or *bazgars*. In the Quetta tahsíl the tenants are the Dehwárs, Lángavs, and Khánazáds or freedmen and, in Pishín, Kákars and Achakzais. The flock-owners are chiefly Kákars of Quetta and Pishín and the Achakzais of Toba. The principal sections depending largely on their flocks, are the Yásínzais of the Hanna valley, the Biánzai Kákars of Pishín, the Sumaláris, Sásolis and Pír Kánris of Shorarúd and the Méhrbán Kahol, Bostán Kahol and Mushkai Kahol of the Malézai, Achakzais; the Bakhshu Kahol, Awán Kahol and Hérab Kahol of the Ghaibézai Achakzais; and the Sáléhzai and Adrakzai sections of the Hamídzais, and the Alízai Achakzais.

Reference has already been made to the Saiads, Taríns and Kákars of Pishín, who are engaged in trade in various parts of India. The labourers are to be chiefly found among the Kákars of Pishín. The only artisans indigenous to the country, are the *push*, or blacksmith, and *péshúwar* or weaver. The black-smiths are generally Jats, are attached to villages or tribal sections, and are paid in kind by a fixed amount per *shabánaroz* per plough, or per family at the harvest. The weavers, the

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majority of whom are Kákars, make rough carpets and are paid in cash by the yard. The women, besides helping in agriculture, occupy their spare time in making felts, felt coats, and earthen pots. The poorer classes make their own sandals (*gáwli*) from raw hides.

Social life.

Social or class distinctions are little observed among Afgháns as a rule. There are a few families, such as the Achakzai Kháns of Pishín, the Sáhibzádas and some of the Saiads, such as the Shádízai Bukháris, who, for various reasons, claim a superior social status to that of their fellows (a superiority, which is exemplified by their giving their daughters in marriage only to selected individuals), but among the rest, social position is on a uniform level. Even the title of *Arbáb* or *malik* confers little distinction, and the holder of the title is treated as an equal by the villagers. In former days these *maliks* and *arbábs* were largely responsible for the revenue and general administration, and as such, claimed superiority of status, as in the case of the Batézais of Pishín, but this has now disappeared. In the absence of a Saiad or *mullá* precedence in an Afghán assembly is generally given to the oldest.

The above remarks do not hold good with the Bráhuis, among whom the chief and the *takkari* or headman of the clan still occupies a social position which is superior to that of the rest of the tribesmen.

As elsewhere in Baluchistán, persons following the occupation of artisans are always placed at the bottom of the social scale.

The custom of taking and giving the news, which is usual everywhere, prevails among the Afgháns and Saiads of the District in a short form. Enquiries and answers are limited to the usual salutation, welcome, and enquiries after the health of the person concerned and also of his immediate relations. When addressing persons of sanctity, the terms Pír Sáhib, Sháh Sáhib, or Mullá Sáhib are used, and their hands are kissed and people rise when they enter an assembly.

Custom of hospitality.

Hospitality is not so profuse as in the case of the Baloch, and the custom is limited to relations and friends, who are entertained according to their position. A near and well-to-do relation or an intimate friend will be given meat and bread or even *puláo* but a poor relation meets his usual fate and must be content with such food as may be ready in the house. Strangers resort to the *masjids*, where their food is sent by such of the villagers as may happen to meet them at the time of their prayers. Among the Achakzais of Toba, however, hospitality is considered a duty, and they will entertain a stranger, who happens to visit a family or settlement. Some of the well-to-do among the Bráhuis of Sariáb, Saiads of Kiráni, Saiads and Taríns of Pishín, keep guest houses, but these are in the first place intended for relatives and friends.

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Co-operation among the tribesmen.

It is customary for the tribesmen to raise subscriptions among themselves on certain occasions, the system being known as *bijjár*, *baspan* or *sawál*. Such subscriptions are raised when an individual has been reduced to poverty, owing to unforeseen circumstances, such as the burning down of his house, or when a heavy fine has been imposed on him, or when he has to pay bride price. Contributions are invited by the person in need from among his own tribesmen, who pay him in cash or kind according to their means. Among Taríns, the *sawál* is never raised to pay for *walwar*, or to meet the expenses of a marriage.

Manner of spending day by a headman, cultivator and shepherd.

A headman, who owns sufficient land to provide for all the needs and comforts of a family, lives at ease. Praying, eating, and gossiping fill his day, with now and again a little business, such as revenue collecting, or acting as peacemaker or arbitrator in a petty dispute. Most of the cultivators are lazy fellows, who are only fully employed at the time of sowing or harvest. They leave much of the work to their women and spend most of their day gossiping. Occasionally they vary the monotony of existence by bringing some fuel, or fodder for the cattle. A shepherd is the only man, who leads a hard life. He is off before dawn, and only returns to the settlement for a short time at midday, after which he is again absent till evening. When the pasture near the village is exhausted, he is sometimes absent from the village or encampment for weeks or months, where his dole of flour and salt is sent to him and is supplemented by milk from his flock. He sleeps in the midst of his flock. It is not surprising that his life renders him extraordinarily hard and active.

Food.

The majority of the people have two meals daily, one in the morning, and the other at sunset. Some cultivators, when at work, have a meal brought them, at midday. All Afgháns have voracious appetites, and a male adult will eat as much as 2 lb. of bread at a meal if he can get it.

Wheat is the staple food grain and is made into unleavened cakes (*patíri*) baked on a griddle. In the summer, leavened cakes (*khamíri*) are usually eaten for the morning meal. Nomads on the march eat *kák* or *kurnú*, made by wrapping dough round a hot stone and putting it in the embers. Sweet cakes (*khalázi* or *béshali*) are popular.

Most people eat their bread plain and without relish, but an infusion of *krut*, known as *krut ghori*, is sometimes poured over the pieces, to which boiling *ghí* is added. Flockowners eat milk and its preparations, generally butter-milk (*shalombae*), with their meals. Meat is seldom eaten in summer except when the inhabitants of a hamlet combine to buy a sheep, goat, or bullock, or when a moribund camel or other animal is killed. It is usually half-boiled and is cooked without condiments except salt.

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Ogra, a porridge made of crushed wheat or maize, boiled in water, with the addition of butter, milk, or *ghí*, was the most common article of food in former days, and is still popular among the Kákars, especially in the spring. Cakes made of maize or millet flour are eaten as a change from wheat.

The Achakzais largely supplement their food stuffs with *shinae*, the fruit of the *Pistacia khanjak*, which is eaten both fresh and dry. Before use, it is pounded and either mixed with the cakes, or made into an infusion in which the cakes are steeped.

The use of *lándi*, a kind of biltong is common among the well-to-do classes, and also among some of the poorer people. Another name for it is *parsanda*, and it is known as *kadít*, *khadít*, or *pattav* in Bráhui. It is generally made of mutton, but occasionally also of goat's meat, beef or camel's flesh. Sheep are specially fattened for the purpose, and are killed about the end of October. The carcase is either skinned, or the wool is pulled off with the help of applications of boiling water. After the carcase has been singed in a fire made from *artemisia* or from camel thorn, the feet are cut off, and it is cleaned; the stomach is then joined together with green twigs, and the body is divided from neck to tail, the bones of the back and legs being taken out. Such meat as adheres to these members is salted, and placed in an emptied entrail, and is considered a great delicacy.

The carcase is now slashed and thoroughly salted, rolled up, and kept for a night, to get rid of the moisture in the meat. After being further treated with salt and asafoetida, the meat is now hung on a forked pole, and exposed to the air, day and night, except in damp weather. It is ready for use in about a month. It is examined from time to time, and more salt and asafoetida are rubbed in if it shows signs of decomposition.

When ready, it is cut up and stored in a jar or sheep skin, and is fit for use till March. When required for eating, it is boiled in an earthen pot for 5 hours over a slow fire. Most people eat it once a week or in very cold days.

Nowadays the diet of the people is becoming more civilized. They drink green tea and *sharbat* and eat fowls, eggs, and rice, but only the Kiráni Saiads eat fish.

Milk and its preparations.

Cows are kept by those in good circumstances but the milk commonly drunk is that of sheep or goats, and sometimes of camels. Curds, made with rennet or *khamazúrae* (*Withania coagulans*), form the basis of most preparations including butter and cheese. Butter milk is much consumed, next in demand to which is *krut* or cakes of boiled whey, which is dried and mixed with salt.

Fruit and vegetables.

Mulberries in their season sometimes form the staple food of the poor, and fresh grapes, apricots, peaches and water

melons are eaten largely. Only the leading men use vegetables. The Kásis and Taríns eat *mung* pulse; a wild plant called *bushka* or *garbust* has long been employed as a vegetable; and the Kiráni Saiads sometimes eat tender vine leaves. Many of the hill plants are also utilized for the purpose, and young lucerne shoots are not despised.

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Meals.

Men, women and children eat together, except among the Achakzais, where the men eat alone and the boys under four eat with the women. The Bráhuis resemble the Achakzais in this respect.

Utensils.

The cooking and eating utensils are few and dirty; they usually consist of a tripod, a stone griddle, an earthen pot, a few drinking bowls, a wooden plate used both for kneading and eating, and a copper can with a spout (*gadwa*).

Dress.

A land-owner wears a muslin turban, costing R. 1-8, tied over an Afghán conical cap (*kulla* or *khwalai*) costing from R. 1 to R. 1-8; a shirt reaching to the knee, price R. 1; and baggy trousers price R. 1-3. Also in summer, a wrapper price R. 1 and in winter either a thick cotton wrapper (*khés*), costing Rs. 3, or a short *postín*, costing Rs. 5. Woollen waistcoats, costing about Rs. 2 are popular and second hand ammunition boots, a pair of which can be bought for about Rs. 3, are now replacing sandals. Long felt coats (*kosae*), and shorter ones (*grátai*) are worn in winter by Achakzais and Kákars.

Shepherds wear a felt cap, which costs about 8 annas covered by a cheaper turban; the other articles of their dress are of inferior quality, the whole costing about Rs. 6-4.

The rise in the standard of living has led to much improvement in the clothes of the wealthy in the shape of better turbans (*lungi*), costing from Rs. 10 to Rs. 13, gold embroidered coats and caps and longcloth shirts and trousers. Pesháwar shoes costing Rs. 4 and imitation *pattu* wrappers (price about Rs. 12), are frequently to be seen, and sometimes fine woollen wrappers, made in Kábul and costing Rs. 60. The hair of the men is cut short over the nape of the neck except with the Bráhuis, who affect long curls.

Woman's dress.

A woman's dress originally consists of a cotton wrapper (*parúnae*), price R. 1-4, a shift or shirt (*kamís* or *pairáhan*) costing R. 1-8 and baggy drawers, price R. 1. The shift is always long among Kákar women, but varies in length among other tribes, that worn by Achakzai women being short. The use of drawers by Kákar women is a recent innovation; formerly they only wore gaiters (*paicha*), which were green for married and white for unmarried women. The drawers worn by Kákar women in Barshor are still replaced by *paichas* immediately after marriage. Shoes are not worn.

The material used by the poor is cotton or chintz, a cheap striped cloth (*ilácha*) being popular for shifts and drawers and

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plain coarse cotton for wrappers. Among Achakzais and Kákars, red cotton (*alwán*) is in much demand. Every married woman possesses a merino, silk, or embroidered shirt, a wrapper and a pair of drawers, which were presented to her on the day of her wedding and are kept for use on special occasions. The shirts worn by married women differ from those worn by girls in having embroidered fronts (*gréwán*) and in being gathered at the back. A woman's dress costs from Rs. 3 to Rs. 12. Ornaments are confined to cheap rings, worn in the nose and ears and on the hands.

Hair.

Part of the hair of unmarried girls is made into fine plaits over the forehead, and tied with a brooch (*zarúnkae*) the mark of maidenhood, and the rest is tied in a single plait at the back. That of married women is divided by a parting, brought round the ear, and made into two plaits at the back.

Dwellings.

The nomads spend the year in blanket tents (*kizhdi*). A *kizhdi* is made of goat's hair, and generally consists of eleven pieces (*tágai*). The ordinary width of a piece is 3 feet, and the length varies from 15 to 24 feet. Three of these pieces stitched together form the fly, and two stitched together form each of the four side walls. They are stretched over curved wooden poles (*skám*). The side walls are protected against rain and water by a stone or mud wall (*pulli*), about one and a half feet high, or by a wattle hurdle. In front of the *kizhdi* is a yard fenced in by matting or bushes. In winter a *kizhdi* is pitched to face the east, in order to get the warmth of the sun, in the spring its face is turned to the south-east. Only the well-to-do can afford a separate *kizhdi* for their flocks and cattle. In the centre of the *kizhdi* (*gholai*), the family live, and this part of the abode contains the hearth and a platform on which are placed blankets, carpets, and spare clothes, and a stand for the water skins. In another division (*shpol*) the sheep and goats are folded at night, while in a third (*ghojil*) larger animals are tethered. A *kizhdi* costs about Rs. 60 and should last for ten years. It is waterproof and a favourite mode of living as may be gathered from the name given it by the Achakzais, "the house of one's heart." Many of the cultivators move from their mud huts into *kizhdis* in the summer. No beds or lamps are used, and the household furniture is scanty and consists, generally of a few blankets, carpets, quilts, pillows, skins for water and grain, some cooking pots, and a hand mill (*méchan*).

A variation of the *kizhdi* is the summer shelter, which is covered with bushes, instead of blankets and is called *kudhal*.

The settled inhabitants live in mud huts, consisting of a single hut 20′ by 15′ in size, and costing about Rs. 40. The roof is either flat or sloping and consists of brushwood covered with mud. In Hanna and parts of Toba, where juniper trees occur,

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the roofs are thatched with juniper bark, and somewhat resemble English cottages. The single room is used for all purposes including its use as a cattle shed. The cultivators in Shorarúd have two huts, one for the family and the other for cattle and fodder. The house of a well-to-do Tarín consists of four parts: a living room, a kitchen, a cattle shed, and a double-storeyed building, the ground flood of which is used for *bhúsa* and fuel, and the upper storey for storing food grain. Such houses are generally surrounded by a courtyard. Wealthy men are now building houses with iron roofs.

Disposal of the dead.

The method of burial usual among Muhammadans is in vogue, the body being laid north and south with the head inclined to the west. The *mullá* draws the *kalíma* either on the forehead of the corpse, or on a piece of pottery or clod, which is placed under its head. Mourning lasts for three days, and among the Achakzais for ten days, in the case of a person over four years old, during which time visits of condolence are received and prayers are offered for the soul of the deceased. On the first day no food is cooked, but the family of the deceased is fed by friends and relatives. Persons coming to condole with the family from a distance bring a sheep or some cash as an offering and are entertained by the bereaved family. On the last day of the mourning, sheep are killed and alms (*shúma*) distributed, after which the bereaved family is entertained by their relatives and friends in turn. The mourning in the case of a child under four years lasts for one day only.

Two stone slabs about 3 feet high are generally fixed upright on the grave of a man, one at the head and the other at the foot, and three on that of a woman, the third being in the centre. Among the Kásis and Quetta Saiads, long poles are inserted over the graves of saintly persons as a mark of reverence.

Amusements and festivals.

The only indoor game is *katár*, which resembles chess, and requires two players each having nine pieces of stick or small stones. Boys play with knuckle bones (*baddai*) and are fond of marbles.

Of outdoor games may be mentioned *hénda*, resembling prisoner's base, and wrestling, the most proficient wrestlers being the Léwa Kahol of the Ashézai Achakzais, and some of the Taríns. *Khusae*, a hopping game, requiring eight or twelve players is another amusement. The well-to-do classes both shoot and course, while the Achakzais, Taríns and Kákars are fond of chasing, tiring and thus killing sisi, chikor and hares. Dancing (*attan*) is popular among the men and women on all festive occasions. The dancers move in a circle, clapping their hands and singing in concert under the leadership of one of their number, who beats the cymbals. Men and women dance in separate circles.

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The only festivals of consequence are the two *Ids*. The shrine of Pír Bukhári at Quetta is the general meeting place for people in the Quetta tahsíl on the first day and the shrine of Sheikh Mánda, about 6 miles from Quetta on the second. The *Id* festivals are also celebrated by the Achakzais at Khusanki in Farákhi, if they do not fall in winter; and in Jilga, Manzakai or Loe Dobandai and Khidar in Hésanna; in Pishín there are gatherings at Chaman near Malikyár, Ináyat Ulla Káréz, and in Shorarúd at Muhammad Khél. Horse races, tent pegging, dancing, shooting at a mark, wrestling, and fighting with coloured eggs form the amusements on these occasions.

Shrines.

Shrines are ubiquitous in the District, almost every village graveyard having a patron saint, who in his lifetime was a village or tribal elder. Reverence for such saints is specially strong among the Achakzais and Kákars. Their shrines generally consist of little more than a heap of stones or a rough mud or stone enclosure, surmounted by some poles to which rags or horns are attached.

In the Achakzai country, the best known shrines include those of Khwája Amrán Bába*; of Achak Nikka, the progenitor of the tribe at Sra Karúna, about 24 miles from the Dobandai levy post; and of Mullá Zargar Nikka, in Rod-i-Alízai. That of the last named is in the Shákha Mánda about 16 miles from Kila Abdulla. He died about 1873 and is credited with having prophesied in his lifetime that flames would issue from the Khojak, that the pistachio trees in the pass would be cut down, that Europeans would build in the Chaman Sahará and at Sirki Talérai, that a fort would be built at Buldak, and that streams of blood would flow in the Sahará.

In Pishín, Baba Sheikh Faríd, whose shrine is at Old Bazar is said to have miraculously produced the Surkháb water, in consideration of which his descendants still hold one-fifteenth of the stream and receive contributions from the grain heaps of persons cultivating under the Surkháb. Saiad Barat is another celebrated saint, who has been mentioned in the article on Kila Abdulla, as is also Khwája Maghdúd Chishti, whose shrine is in Manzakai and who is said to have miraculously cut the rift in the Chappar mountain with his sword.

Pír Abdul Hakím *alias* Nána Sáhib.

Abdul Hakím, son of Sikandar Sháh, a Shamozai Kákar of Yúsaf Kach in the Pishín tahsíl, a contemporary of Sháh Husein, Ghilzai, and Nádir Sháh, is another local celebrity who is credited with many miracles, including the stopping of the pistachio trees, which were following him, in the Khojak pass, and the rendering of all the snakes in Toba innocuous. At Khánozai he induced the people to treat his father, Sikandar Sháh, as a saint and contribute to the upkeep of his shrine,

* Described in the account of Khwája Amrán hill.

and then passed on to the Duki tahsíl where he died and was buried at Chotiáli.

Kutab Nikka.

Kutab or Kutah Nikka was an Ahmad Khél, Targhara by birth and the presence of his shrine, near Háji Khán Kila in Toba, is believed to render that country immune from cholera. His assistance is specially efficacious to childless women and toy cradles are a common offering to him. Children, born in answer to vows made to him, are said always to bear some mark of the saint. Oaths are also given at the shrine to persons suspected of theft.

Pír Rahím Sháh.

In Shorarúd, the best known shrine is that of Pír Rahím Sháh, which has been mentioned in the article on Muhammad Khél.

Names and titles.

Both among girls and boys many names are to be found, which are possibly of totemistic origin. They are those of animals or plants, and references to colours such as *nilai*, bay, *samand*, dun, are frequent among Afgháns. In other cases, the denominations used for men are those usual among Muhammadans while, in the case of women, names beginning or ending with Bíbi, Khátún, or Náz are popular, such as Bakht Bíbi, Bíbi Maryam, Bíbi Aisha, Ganj Khátún, Mah Náz or Náz Bíbi, etc. Shortened forms of the long names given to men such as Tájo for Táj Muhammad, Walo for Wali Muhammad, etc., are frequently used.

No ceremonies are observed on the birth of a girl. She is named by the mother or some female relative. The birth of a boy is announced thrice by the women attending the mother. Guns are at once fired and there are general rejoicings. The boy is named on the third day after consultation with a *mullá*.

In stating his name, a man will generally add that of his sub-section, section, clan, tribe or other group to which he belongs. The term *khán* is used both as a suffix and prefix, and in the latter case it is considered a mark of honour. The word *malik* is applied not only to village headmen recognised by Government, but also to large landholders and men of influence. The term *sardár* is strictly confined to some of the Muhammadzai refugees residing in the District. But it is commonly applied by the Achakzais to their leading men and is also used by the Durránis residing in the Quetta tahsíl.

Among titles possessing a religious significance may be mentioned, the prefix *Mír* or *Mira* and the suffix *Sháh*, which are employed by Saiads, but the term *Mír* is also often used for the leading men among the Bráhuis. The terms *mullá* and *tálab* are applied to men, who have some pretensions to religious learning, the latter being applied to those who are still under religious instruction. The descendants of *mullás* are known as *Sáhibzáda.*

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Rules of honour.

A knowledge of the rules of honour (*mayár*), which prevailed among the people before the British occupation and which still influence the actions of many of them, is not without importance from the point of view of administration, and a short reference may be made to them here. They are gradually giving way before British law and order.

It was incumbent on an Afghán:

(1) To avenge blood.
(2) To fight to the death for a person who had taken refuge with him. The refugee was called *hamsáyáh*, and was always maintained by his protector so long as he remained under the latter's roof.
(3) To defend to the last property entrusted to him.
(4) To be hospitable and to provide for the safety of the person and property of a guest. Responsibility for the property of a guest does not appear to have been undertaken by the Taríns and Kákars of Pishín, but an Achakzai was bound to recoup any loss.
(5) To refrain from killing a woman, a Hindu, a menial, or a boy who had not taken to trousers.
(6) To pardon an offence on the intercession of a woman of the offender's family. Among Achakzais, an exception was always made in cases of adultery and murder.
(7) To refrain from killing a man, who had entered the shrine of a Pír, so long as he remained within its precincts; and also a man who, whilst fighting, begged for quarter with grass in his mouth.
(8) To cease fighting when a *mullá*, a Saiad, or a woman, bearing the Korán on his or her head, intervened between the parties.
(9) To punish an adulterer with death.

System of reprisals.

The three 'Zs,' *zan*, *zar*, and *zamín** have always been the causes leading to bloodshed, especially the first and last. In pre-British days, blood had to be avenged by blood, if the parties were of equal position and influence; but if the relations of the person killed were weak, the matter was compromised by the payment of compensation. In cases in which the parties belonged to the same tribe and the offender himself was out of reach, his nearest relation, viz.: his brother, father or cousin was slain. If, however, the offender belonged to another tribe, it was incumbent on the aggrieved party to kill one of the section, clan or tribe to which the former belonged, for instance if an Alízai Tarín killed a Kákar, the Kákars might take vengeance

* Woman, money, and land.—ED.

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on the Khudádádzai Taríns. Such a system was liable to indefinite extension, and led to blood feuds which, unless nipped in the bud, developed until either the authorities or friends intervened to arbitrate. The losses on either side were then reckoned up and compensation was paid to the side which had lost most.

Blood compensation.

Might was right in days gone by and the position of the party aggrieved was the principal factor in determining the price to be paid for blood; hence the compensation for a *mullá*, a Saiad or a person belonging to a *sardár khél* or leading family, was ordinarily double that payable for a tribesman. The general rate among the Achakzais was six girls or 1,200 Kandahári rupees, equal to about Rs. 600; among the Pishín Kákars and Taríns Rs. 2,800; and among the Kásis of Quetta Rs. 3,000, generally paid in girls, a girl for this purpose being valued at Rs. 500. Among other tribes it was determined by *shariat*. The loss of an eye, a hand, ear, or foot was counted as equivalent to half a life; the loss of a nose as equivalent to a life; the compensation for the loss of a tooth varied from Rs. 31 to Rs. 62. Among the Achakzais a thief, when caught was made to pay seven times the value of the property stolen, while among the Kásis his face was blackened, he was mounted on a donkey, and turned out of the village.

Afghán refugees.

There are twenty families of the Afghán refugees, who permanently reside in the District, and who are in receipt of allowances from Government. Of these, 10 are Muhammadzai Afgháns, 4 are Ghilzais, while the rest belong to the Gurg, Sulaimán Khél, Bábozai, Popalzai, Alakozai and Shínghari Saiad sections. The settlement of further refugees has not been encouraged since 1904.

Chapter II.

ECONOMIC.

AGRICULTURE.

General conditions.

The two dominant factors which present themselves, when considering the general conditions under which agriculture can be carried on in the Quetta-Pishín District, are the presence of mountainous tracts, which can never be made capable of cultivation, and the absolute necessity of perennial irrigation to ensure a harvest. A large part of the cultivable area, moreover, consists of land which is incapable of permanent irrigation and entirely depends on rainfall and from this a fair crop cannot be expected oftener than once in about five years. In spite of the fact, therefore, that the District is one of the best irrigated in the Baluchistán highlands, cultivation over a large portion of its area must always be sporadic, and dependence on anything but permanently irrigated land precarious.

In Chaman the larger culturable tracts are Loé Toba, Tabína, and the plain round Chaman town locally known as the Sahará, most of which are dry crop. Elsewhere in this part, cultivation takes place in patches, in the ravines, from springs and streams. The Barshor and Toba Kákari circles of Pishín show conditions similar to those of Achakzai Toba, but in Barshor the amount of land is limited and the water supply copious, and cultivation is done on terraced fields. The level plain of the Pishín valley contains large dry crop areas, in addition to the tracts irrigated from Government works and natural sources, but the soil is poor and contains much saline matter.

Writing of the Quetta tahsíl in 1895, Mr. J. A. Crawford remarked: "The stony slopes at the foot of the mountains are useful only for grazing; there are blocks of land entirely dependent upon the rainfall; and the small valley of Hanna shows close cultivation in a hilly tract where water is abundant and land scarce. Apart from these exceptional tracts, the culturable and irrigable area may be regarded as of practically uniform quality, though no doubt the Sariáb and Kási circles have better land than the rest."

The soil of Shorarúd, as the name implies, is largely impregnated with salt especially in the vicinity of the river, but, farther from the banks, the plain has good deep alluvial soil to which the stony skirts of the hills slope gently down.

Soils.

No scientific analyses of the soil in various parts of the District have been made, but the people of the country have a

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classification of their own based on the most obvious properties. The best is a stiff soil known by the name of *pakha*, *dágana* or *tora* and *tora bakhúna*; next comes that which contains silt, called *mattana*; *shagai* and *régana* are soils containing gravel and are best suited for vines; *réki* or *régi* has an admixture of sand and is suitable for melon-growing. *Pakha* and *mattana* are most common in Sariáb, Kási and Kuchlák in Quetta; round Manzakai in Pishín and in Farákhi in Toba; *shagai* and *régana* in Hanna and Aghbarg in Quetta, and in Kárézát-i-Kákari, Toba Kákari, and Barshor in Pishín. A reddish clay, known as *surkai* or *sra*, is common in Farákhi, Tabína and the Sarwésht circle of Pishín. The worst kind of soil is *sharana*, which produces salt efflorescence; it is met with in all parts but chiefly in Shorarúd and Pishín.

Rainfall and system of cultivation in relation thereto.

The uncertainty of the rainfall, which, as stated in a previous chapter varies from about 7 to 10½ inches, constitutes a factor in agricultural life with which the cultivator has constantly to reckon. "A good rainfall," wrote Mr. Crawford, "naturally affects, not only the amount of rain-crop cultivation, but also the irrigated land, and the springs, streams and *kárézes* which supply the water for irrigation. For a really good harvest, rain or snow before the end of December is required. This enables a large amount of rain-crop land to be brought under cultivation, and replenishes the streams, springs and *kárézes*." Even more important, however, than a good rainfall is snowfall. Heavy rain drains off rapidly in floods and, though useful for flood and rain-crop cultivation, has not the same effect in supplying the deficiencies in the natural sources of irrigation as a heavy covering of snow. As an instance of the importance of rain and snowfall it may be mentioned that, owing to their failure between December, 1901, and March, 1902, there was no *khushkába* cultivation in the District, considerable mortality occurred among the flocks, and the water in many of the springs and *kárézes* almost disappeared. In the following year, 1903, there was good rain and snow, large tracts of *khushkába* were cultivated and some of the springs and *kárézes* which had dried, commenced running. There was also abundant pasturage.

In view of such conditions it is natural that much attention should have been paid to permanent irrigation, and, besides the two Government irrigation works of Shébo and Khushdil Khán in Pishín, the District has many streams, *kárézes* and springs, the latter being by far the most numerous. In the two tahsíls of Quetta and Pishín which have been surveyed, the irrigated area represents about 31 per cent of the total culturable area and 68 per cent of the area under cultivation in 1902-3. Details are given in table V, Vol. B. In the same two tahsíls the total cultivable area in 1902-3 was 2,07,317

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acres, of which 65,555 acres were under rain-crop and 1,41,763 acres under various sources of irrigation. Details of the sources of irrigation by tahsíls will be found in table IV, Vol. B. The general character of these sources of irrigation is dealt with in a subsequent section.

For purposes of dry-crop cultivation in Quetta and Sariáb the lands are embanked, the cultivated plots being known as *bands*. These *bands* are filled with rain or flood water in the summer or winter, after which they are ploughed and the seed is sown. In Pishín and Toba such tracts are seldom embanked, and sowing takes place only when the rain and snowfall has given sufficient moisture for the purpose. For a really good harvest in dry-crop lands summer rain is required. The floods caused by this fill the embankments, after which the land is ploughed and smoothed to retain the moisture until the time comes for sowing. Winter sowings in dry-crop lands seldom produce much straw, though a fair outturn of grain may be expected. The arrival at maturity of all dry-crops is, of course, dependent on good rain in early spring. In parts of the Quetta tahsíl and in the Alízai circle of Pishín a system, known as *garar*, is followed in dry-crop lands, the soil being prepared in September and October and the seed sown without moisture, after which it is left till the winter rains cause it to germinate.

Population engaged in and dependent on agriculture.

The indigenous population censused in 1901 was 84,640, of which 21,576 males were classed as actual agricultural workers and 47,949 (both sexes) as dependants.* Most of the proprietors are themselves the tillers of the soil. A good many of the Saiads and Taríns of Pishín are engaged in trade in various parts of the world and their lands are cultivated for them by other tribesmen. The well-to-do among the people of the Quetta tahsíl also employ tenants-at-will. The best cultivators are the Achakzais of Pishín, Kákars, Bráhuis, and some of the Kandahária and other trans-frontier men.

Seasons of the year, sowing and harvest times.

The cultivator divides the year into four seasons, and these seasons are again sub-divided into *tsilas*, each *tsila* ordinarily comprising forty days. The nine *tsilas* are as follows, the first beginning with spring: Psarlae, Dobae, Ahár, Wasa, Spéra manae, Ghwar manae, Tora *tsila*, Spína *tsila* and Sra *tsila*.

Two principal harvests are recognised: the *khushbar* (more properly *khushkbar*) or spring harvest, which includes the crops sown between October and March and reaped by the month of July; and the *sabzbar* or *sauzbar*, i.e., the autumn harvest which includes the crops sown from May to July and reaped by the month of November. Among Revenue officials these harvests are known, as in India, as *rabi* and *kharíf*. The agricultural calendar given further on shows the periods into

which the year is divided by the cultivator and the corresponding period according to the English calendar. AGRICULTURE.

The following are the chief crops produced at each harvest :—

Khushbar.	*Sabzbar.*
Wheat (*Triticum sativum*).	Juári—maize (*Zea mays*).
Barley (*Hordeum vulgare*).	Azhdan (*Panicum miliaceum*).
	Ghosht (*Panicum Italicum*).
	Melons or *Pálézát* (*Cucurbita*).

Lucerne (*Medicago sativa*) is classified as a *sabzbar* crop but really belongs to neither category, as it is generally sown either in the spring or autumn and is cut from May to October.

The cultivator depends principally on the *khushbar* crop and it is therefore appropriately called the *ghatta fasal* or major harvest in the northern and north-eastern parts of the District. The *sabzbar* is specially important to the cultivators of the Quetta tahsíl as they find a ready sale for their lucerne, *juári* cut green for fodder, melons of all kinds and other cucurbitaceous crops. They also make a good income from fruit, especially from apricots, pomegranates, peaches, quinces, plums and various kinds of grapes.

The following statement shows the more important agricultural operations performed each month. It will be seen that the actual dates vary according to the elevation and this is the general test among the cultivators for the relative heights of different places.

January. (*Tora* and *spína tsila.*)

In Toba no agricultural operations are possible. In the Sahara part of the Chaman Sub-division, dry-crop lands are sown with wheat, if there has been rainfall. In Pishín and Quetta wheat and barley are sown both in irrigated and unirrigated lands, and sowings in irrigated lands are nearly completed. Wheat and barley crops, which were sown earlier in the season, are also watered, and cattle are generally allowed to graze in such fields. In Shorarúd the sowing of barley and *shoráwaki* wheat is commenced, and sowing in dry-crop areas takes place. Lands lying fallow for the autumn crop are manured in Pishín. Old orchards are watered (*yakháb*) if there has been no rain.

February. (*Spína* and *sara tsila.*)

No work can yet be done in upper Toba; in the Sahara dry-crop lands are sown with wheat. In Quetta and Pishín wheat and barley crops are watered if there has been no rain. In Shorarúd the sowing of wheat and barley in irrigated and unirrigated lands is completed.

March. (*Sara tsila*).

The Achakzais move from the Chaman Sahara to the Toba highlands and sow wheat in dry-crop areas. In the

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Sahara, too, the sowing of wheat in dry-crop lands continues up to about the 15th. Barley is sown in Toba during the second half of the month. In the Sahara barley sowings are completed during the first half. In Quetta and Pishín, water channels are cleaned and repaired and wheat and barley fields are watered; browsing with sheep etc., is stopped. Wheat sowing in dry-crop lands continues up to the end of the month. Ploughings take place for autumn crops and also manuring. Lucerne sowing begins everywhere except in Toba, and watering of the old crops takes place. New trees are planted in orchards. Three-month (*sehmáhi*) potatoes are planted in Quetta.

April. (*Sara tsila* and *psarlae*).

Wheat sowings continue in Toba Achakzai. Crops are watered in Quetta and Pishín, and, by the end of the month, ears begin to appear. In Shorarúd, grain forms in the wheat ears. Dry crops suffer if no rain is received during this month. Lucerne sowing continues. The fruit trees are everywhere in blossom. Hail in April causes much damage to almonds and apricots. Sowings of potatoes and millets begun, also of melons except in Toba. The Bráhuis of Sariáb return from Kachhi.

May. (*Psarlae*).

In Farákhi and Chinár in Achakzai Toba *tauda ghanam*, or late wheat, is sown in seasons when there has been an abnormally good rainfall. Instances are known of wheat, which has been harvested and threshed in Shoráwak, being imported and sown in the same year in Toba. In the Sahara and in Pishín the wheat and barley are in ear (*saf*), and irrigation is necessary to keep the stalks stiff, but in Quetta the crops are not so far advanced. At this time rain is beneficial, but if it is followed by the south wind (*purkho*) rust occurs, and if the west wind (*barvo*) does not blow for ten days to three weeks, the crops also suffer. The harvesting of barley begins in Pishín, Shorarúd and the Sahara at the end of this month. Lucerne cutting also begins. Sowing of the principal autumn crops commences all over the district after the 10th of May and continues till June. Mulberries ripen about the close of the month. In Quetta onions and six-month potatoes are planted.

June. (*Dobae* and *ahár* or *bád-i-garm*).

The wheat harvest is begun and completed in the Chaman Sahara, and begins elsewhere. Barley harvest is finished everywhere but in Quetta, where it is begun and completed early in July. In Quetta the *waláiti* and *shoráwaki* wheat is half ripe (*abús*). Autumn sowings are commenced in Toba and maize sowing is continued in the Sahara. Elsewhere sowings of autumn crops cease. Three-monthly potatoes are dug in Quetta. Superfluous flowers are plucked off the *jowaki* melons (*gulgíri*) and small melons (*mora*) are covered with earth. The mulberries ripen and apricots and plums begin to do so in the warmer parts of the District.

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July. (*Ahár*).

The harvesting of wheat begins in Toba Achakzai about the close of the month and is completed in Quetta and Pishín, when threshing operations commence. The barley harvest in Quetta is completed. In Quetta and Pishín lands are ploughed over and harrowed for the next spring crop. Maize is sown in Toba Achakzai in the first half of the month in the fields from which barley has been harvested. In Pishín, maize is watered and in those fields where maize plants are too thick, the superfluous ones are uprooted and given as fodder to cattle. Millet crops are watered everywhere but in Toba where the seed is only sown during this month. Water melons are sown in the Sahara and sweet melons are ripe. *Garma* melons ripen about the end of the month in Pishín and Quetta. In Pishín apricots and plums are plucked and apples, grapes and almonds begin to ripen. Most of the grapes ripen in Quetta about the end of the month.

August. (*Wasa*).

The wheat in Toba, Pishín, Shorarúd and Quetta is threshed and cleaned, and in Toba wheat sowings for the following spring commence in irrigated lands. In Quetta early wheat (*waláiti*) is sown in irrigated lands about the end of the month. If the embankments are filled with rain water, they are ploughed and smoothed for the ensuing wheat crops. Millet (*ghosht*) in Toba is harvested. Maize in the Sahara is high above the ground. In Quetta it is cut green and used as fodder. In Pishín the autumn *juári* crops begin to ripen and *azhdan* is harvested. Pistachio fruit ripens in Toba about the close of the month. This is the busiest month for the fruit-grower: grapes are abundant everywhere and all melons are ripe and ready for the market.

September. (*Spéra manae*).

Wheat sowing continues in the irrigated lands of Quetta and Toba. Sowing commences also in the Sahara, Pishín and Shorarúd. In Quetta, if there has been rain in July and August, wheat is sown with the drill in dry-crop land prepared in August. The pistachio fruit is harvested in Toba. Maize is reaped in the Sahara and elsewhere in the District at the beginning of September, but in Toba harvesting does not begin till after the 15th of the month. The grapes in Toba ripen now. Lucerne sowings take place in Pishín.

October. (*Spéra manae*).

Wheat sowings in irrigated lands continue in Toba for a time, but most of the people leave the highlands for the Sahara and Pishín. Spring crop sowings are in full swing in Pishín, and after the seed is sown, the fields are harrowed and the plots made. Wheat sowing in Quetta and Shorarúd continues and that sown in August and September is watered for the first time (*kharkáwa*). The harvesting of the autumn crop is completed. Lucerne sowings continue in Pishín. In Quetta six-month potatoes and onions are dug. The Ghilzai *káréz* diggers begin to arrive from Afghánistán, and the work of cleaning *kárézes* is begun about the close of the month.

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November. (*Ghwar manae*).

Wheat sowings continue in the Sahara of Chaman. Wheat is sown in Pishín in irrigated lands, and, if rain has fallen, in dry lands also. In Shorarúd *shoráwaki* (late) wheat is sown in irrigated lands and in Quetta *waláiti* wheat is sown up to the end of the month. Even if there has been no rain in this month, wheat is sown broadcast in *khushkába* lands which have been previously prepared. Barley is sown in irrigated lands in Shorarúd. In Quetta roots of old lucerne are dug out and given to cattle as fodder.

December. (*Ghwar manae* and *tora tsila*).

The few cultivators remaining in Toba are busy preparing for the severity of the ensuing months. In the Sahara wheat sowing continues. Rabi sowings continue in irrigated lands in Pishín and also in dry land if there has been rain. If no rain has fallen, wheat already sown is watered for the first time (*kharkáwa*). In Shorarúd, wheat sown in September is fit for fodder (*khasíl*), and either flocks are browsed on it or the green fodder is cut and given to cattle. In Quetta the sowing of barley and *shoráwaki* (late) wheat commences about the beginning of the month. If there has been no rain, the *waláiti* wheat is given its first watering (*kharkáwa*).

Principal crops.

The largest and the most important crop is *ghanam* (wheat—*Triticum sativum*), which forms the staple food grain of the people. Of other food grains, *badághar* (maize), *azhdan* (*Panicum miliaceum*), *juári* (*Andropogon sorghum*), *ghosht* (*Panicum Italicum*), barley (*Hordeum vulgare*), and *múng* (*Phaseolus mungo*) are cultivated. Amongst miscellaneous crops are melons and other cucurbitaceous plants, tobacco and potatoes. Vegetables are grown chiefly in the Quetta tahsíl and include the egg plant (*bángan*), ladies' finger (*bindai*) ; *bushka*, red and white cabbage (*gobae*), cauliflowers (*gobae*), *Colocasia antiquorum* (*kachálú*), vegetable marrows (*kadú*), the bitter gourd (*karela*), the asparagus bean (*lobia*), the Indian purslane (*khulfa* or *maréri*), garden pea (*mattar*), radish (*múlae*), spinach (*pálakka*), potatoes (*patáta*), onion (*piyáz*), red tomatoes (*rúmi bánjan*), turnip (*shalgham*), carrots (*zardakka* or *gázarra*), the capsicum beetroot (*chukandar*), and coriander (*dhanía*).

Table VI in Vol. B. contains details of the average area under principal crops, in each of the two tahsíls of Quetta and Pishín, since the introduction of the Settlement. The average area under gardens is 1,282 acres; the area under the spring or *rabi* harvest has been 86,498 acres of which 75,790 acres were under wheat and 10,708 under barley; the average area cultivated with *kharíf* or autumn crops covers 8,756 acres, the principal crops being shown in the marginal table. The last year 1902-3 for which figures are shown in the table was a dry one and cul-

Maize	3,929	Acres.
Pálézát	1,974	,,
Lucerne	1,922	,,
Millets	401	,,
Juári	209	,,
Potatoes	290	,,
Tobacco	29	,,

tivation had largely decreased, there being only 38,467 acres under *rabi* and 7,536 acres under *kharíf* crops. AGRICULTURE.

Wheat	4,162	Acres.
Barley	1,241	„
Melons	98	„
Lucerne	37	„
Miscellaneous crops	18	„

In the lands under the two irrigation works in Pishín the average area* cultivated during the five years ending with 1901-2 is shown in the margin.

Staple food grains. Wheat.

The wheat grown in the District is of two kinds, called respectively *da sára ghanam* and *da tauda ghanam;* each kind in its turn consists of a white and red variety, locally known as *spín* and *súr ghanam.* The seed of the *sára spín ghanam* (winter white wheat) is said to have been originally imported from Garmsél in Afghánistán, while the red variety is said to be indigenous to Quetta. The seed of the *tauda* (summer or hot) wheat, both white and red, was imported from Shoráwak in Afghánistán; hence it is also called *shoráwaki ghanam.* For their own consumption the people prefer the red wheat, but the white is much grown because it fetches a better price. White winter wheat fetches the best price of all. Winter (*sára*) wheat ripens in about nine months and *tauda* in a little more than half that period.

Sowing in rich soil, which has a sufficient supply of water is broadcast, the process being locally known as *lawastung;* sowing in poor soil, possessing an insufficient supply of water is by means of the drill and is called *náli.*

Early in the spring (*psarlae*), the land to be tilled is ploughed over once, the first ploughing being called *shom.* In June the land is again ploughed, this being called *dohalíza.* When Canopus (*suhél*) appears in September, the land is watered for the first time. This first watering is known as *náwa.* When the surface of the soil has dried and has assumed a whitish appearance, the seed is sown broadcast, and it is then ploughed in; this is called *karáhanra.* Seed sown before Canopus appears is said to contract a disease called *bútak.* It is usual to sow the seed before noon. Early in the morning the landlord (*bádár*) sends to the field baked bread covered with clarified butter, called *ghorai*, an offering of which is made to Pír Dehgán, i.e., the patron saint of the cultivators, after which it is distributed and consumed by those present. If bread is not available, one *kása* of grain is distributed as alms in the name of the saint.

If a strong wind is blowing at the time of sowing, the next process, viz. harrowing (*mála*), is done immediately, but, if there is no wind, the process is performed in the afternoon. After three or four days the land which has been sown, is

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* These figures are included in those given in the preceding paragraph.

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The first watering takes place about forty days after sowing. The second watering is given when the constellation known as the *pérwane* disappears before dawn, and it is called the *da waláré pérwane obo*, i.e., the watering before *pérwane* has set. This watering takes place about the last week in December.

After the second watering the crop generally requires no further irrigation for about two months, during the *spína tsíla*, i.e., during January and February but, at the end of this period, the crop is again watered, this watering being known as *da toré ghuté obo*. After this, the plants are beginning to come to a head and water is not given to the crop as it brings on a disease called *spínlakai*. As soon as the tulips come into bloom towards the middle of April, the fourth watering is given and is known as *da sra gul obo*, i.e., the watering when the tulip appears. This watering is considered highly beneficial and the cultivators have a proverb:—*da sra gul obo la wíno barábar de*, i.e., the tulip time watering is the very blood of the plant. Henceforth water is given regularly at intervals of ten or fifteen days until the grain has formed in the ears, but, on the grain having formed, the watering of wheat which is intended for home consumption, is stopped, while water is continued to the crop intended for sale. Water causes the grain to become larger in size, heavier and harder, but bread made from it becomes dry and hard in a short time. Shoráwak wheat (*déma* or *tauda ghanam*), which can be cultivated up to about February, requires only one watering after the formation of the ear.

The time for reaping has come, when the ears (*wazhae*) bend downwards with the weight of the ripe grain. The reapers (*lavyán*) must cut the crop with a sickle (*lor*), collect it in bundles, put it in nets (*ghunj*) and assist to load the nets on bullocks or other beasts of burden. Before the British occupation, the straw had little or no value, and only the upper ends of the crop were cut. This was called *sarkao*. Nowadays the stalk is cut close to the ground.

There are two methods of threshing—*ghobal* and *tsapar*. The former method is that usual in India, a long pole being placed in the ground in the centre of the threshing floor and ten or fifteen bullocks being driven round it to tread out the grain. In the other case a bush-covered hurdle and bullocks are used, the hurdle being driven over the corn and the grain being extracted both by the pressure of the hurdle and of the bullocks' feet. Threshing being over, both straw and grain are collected into a heap (*wanra*) and the winnowing is then com-

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menced with the winnowing fork (*chár shákha*). The west wind (*barvo*) is now blowing, and assists the process of separating the straw from the grain. The husks and chaff are winnowed in their turn with the *trapae*, the process being named *parghat*. The process is repeated several times till the grain is quite clean, a labourer (*gagra*), meanwhile, collecting the grain with a broom into a heap, (*riása*). The owner then surrounds the grain heap with heaps of dry earth placed at intervals of about one foot, and sets his seal (*thappa*) on them so that any loss can be at once detected.

Any day, except a Tuesday or a Saturday, is considered suitable for the division of the grain (*batái*), but a Friday is preferred. On the day fixed, the *mullá* is sent for who brings with him a copy of the Korán and a sword or a knife. He first repeats the verse of the Korán beginning with *Qul ho walláh*, and then draws a line with the knife or sword round the grain heap to ward off evil spirits, which are believed to hover about the grain at the time of the division, and lastly he places the naked sword or knife and the Korán in the middle of the heap. If a *mullá* is not available, this ceremony is performed by the landlord or the tenant, but any one who officiates at it must be purified, that is to say he must have performed his ablutions. Whatever the measure to be used, the first which is filled is put aside (*jár karúnae*), and is given to the *mullá* if he is present at the time of division. Landowner and cultivator then proceed to take their allotted shares but first the carpenter, winnower, crop watcher and other village servants must be paid. Refreshments for officials, friends, etc., are provided from a special allotment of the grain heap known as *miún kharcha*.

Wheat in Quetta is subject to several kinds of diseases. If there is severe cold in April, especially during the two days called *wesákhi band* the ears become black. In early spring, heavy rain sometimes occurs and the climate becomes very variable, severe cold being followed by sudden heat; if the south wind (*purkho*) blows at this time the crop is liable to rust (*surkhai*). Rust does not appear if the rain is followed by the west wind. When grain has formed in the ears and the crop is strong, the ears sometimes shrivel and the grain dries up. This disease, which is said to be due to the presence of clouds and of great heat at the same time, is called *bád mál*. No remedies are known to the cultivators for the first and last of these diseases, but when rust (*surkhai*) appears, the aid of the *mullás* and saiads is sought. The Shádízai saiads of Pishín are credited with miraculous powers in this respect. At the *loé akhtar* (*Id-uz-zuha*), too, when sheep or goats are sacrificed, every cultivator of ordinary forethought dips a piece of felt in the blood and puts it quietly by for use on the appearance

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of rust, when he places the piece of felt at the mouth of the water channel which irrigates the field, and believes the rust will vanish. This is called *Akhtar wína*, i.e., the blood of the Id.

Cultivation of wheat in dry lands.

In the Quetta tahsíl where the fields have been embanked, the embankments are repaired in June and July and if filled with rain or flood water they are ploughed and harrowed smooth, the seed being sown in September. The sowing season, however, extends from September to about the middle of January, and in Toba cultivation is continued as late as the first week of April.

Manure and outturn.

Fields lying close to villages and those along hill torrents in Toba are generally manured and the value of manure is being constantly and increasingly apppreciated.

In Quetta, 75 experiments were made in 1895-6 and the outturn of wheat per acre in irrigated land was found to be 15½ maunds, the highest being 17½ maunds, in the Kási circle and the lowest 14 maunds in the Baléli and Durráni circles. Mr. J. A. Crawford, in commenting on the items, remarked that the results of crop experiments were notoriously apt to be high. Further experiments, made in 1903-4, however, showed still higher returns, the average in irrigated and manured land being 24 mds. 6⅔ seers, and in irrigated land not manured 13½ maunds. In other parts the average has been found to be as under:—

	Pishín.	Shorarúd.	Chaman.
	Mds.	*Mds.*	*Mds.*
Land irrigated and manured ...	25	15	15
Irrigated land not manured ...	16	12	10
Dry land	5	5	3

The average yield per acre in land under the Government irrigation works in Pishín, which are not generally manured, has been as follows:—

Period.		*Mds.*	*Srs.*	*Ch.*
Shébo Canal 1892-3 to 1903-4	...	5	32	14
Khushdil Khán 1892-3 to 1903-4	...	7	34	9

The reasons for the difference between the returns from crop experiments and those from the canal areas no doubt are: (1) that it is very difficult to select an average plot and the tendency always is to make too little allowance for the worst parts of a *mahál* some of which may have failed entirely and (2) that a considerable amount of waste and peculation goes on in connection with the *batái* operations.

The weight of *bhúsa* obtained from an acre of wheat or barley is assumed for revenue purposes to be the same as that of the grain.

During the winter and up to February, wheat which shows very strong growth is browsed down by sheep and goats.

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Subsidiary food crops.

Barley.

In the Quetta and Pishín tahsíls barley covers about 12 per cent of the area cultivated with *rabi* crops. It is sown broadcast both in irrigated and dry lands, the sowing season extending from November to March. With this exception the method of cultivation resembles that of wheat. That sown early is watered when the leaves are formed and browsing by cattle is allowed up to about the middle of March when the second watering is given. The third watering takes place about the end of April and the crop is ready by the end of May. Rain is necessary in April for a barley crop cultivated in dry land. On lands under the Shébo Canal the outturn of barley per acre averaged 7 mds. 33 srs. and 4 chs. between 1892-3 and 1903-4, and under the Khushdil Khán Reservoir 10 mds. 23 srs. and 6 chs. The grain is chiefly used for horses, but the poorer classes grind it into flour and make cakes of it. A good quality of black barley, the stalks of which yield much straw, has recently been imported from Meshed and promises to be a success.

Maize.

Maize is commonly known as *juári* in the district, but when it is necessary to distinguish it from *Andropogon sorghum*, it is called *badágħar juári*, while the latter is known as *targhara juári*. Maize is cultivated in all parts of the District, almost exclusively in irrigated lands. In the Quetta and Pishín tahsíls it covers about 45 per cent. of the average area annually brought under *kharíf* cultivation. The sowing season lasts from May to about the 10th of July.

The usual method of cultivation is for the land either to be manured in December and allowed to lie fallow till ploughing time, or for it both to be manured and ploughed in April (*shudiára*). It is next watered in June, this watering being known as *náwa*. The surface dries in four or five days (*spínsari*), when the seed is scattered broadcast (*páshal*) and ploughed in, the ground being afterwards harrowed smooth. On level ground, plots (*púli*), about 10′ × 15′, are made, but this system is not followed in lands which lie on the slopes of hills (*adám*). The seed germinates in about four days. When all plants are in leaf the crop is called *zúka*. At this stage the plants are sometimes affected by a caterpillar, known as *laram*, but immediate watering generally kills them. Ordinarily the first watering (*kharkáwa*) takes place twenty days after the leaves have made their appearance. The second watering is given eight days after the first, and subsequent waterings at intervals of about ten days in level ground, but oftener on the hill slopes. Weeding commences in August, and at this time the stalks have assumed joints, and the flowers (*baskhulae*) appear. About a fortnight later the ears begin to form; excessive watering at this time is injurious, as it prevents the formation of grain in the ears. A disease known as *torkai*, which renders the grain black, sometimes occurs at this stage,

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and is said to be caused by the cessation of the wind and a high temperature. *Chinjai*, another disease, is caused by want of water and very high west winds. The crop ripens about the 15th of September when the ears are separated from the stalks and, after their covering has been stripped off, are left to dry in the sun for about four days. They are then threshed with sticks. The stalks are used as fodder. The roots left in the ground sometimes sprout again, but the stalks (*bachak*) do not mature and are used as green fodder only.

Only the poorer natives use maize regularly for food though all are fond of parching and eating the ears, when the grain has just formed. The ripe grain is boiled with water into a porridge (*kohali*) or made into flour and baked into stiff cakes. Another form of cake is called *piátsa;* it is made from flour which has been mixed into a very thin paste.

The Achakzais have an interesting saying indicating the properties of the maize plant, which runs as follows:—

> When you are green, you are as soft as a Muhammadzai:
> When you grow up, you have a tuft like a Sadozai:
> When you are in ear, you have as many clothes as a Bárakzai:
> When you are ripe, your complexion is as pale as that of a temperate man:
> When we take you to the mill, you drop into it grain by grain, like rosary beads:
> When we knead your flour, you require warm water like a dirty man:
> When we put you on the griddle pan, we have to lift you in both hands like the sacred Korán:
> And when the bread is baked, ugh! what a taste!

Manure is seldom used for maize. In the Quetta tahsíl, crop experiments made in irrigated but unmanured land showed a produce of 13 maunds, 11 seers and 6$\frac{4}{7}$ chittacks per acre.

Juári.

Juári (*Andropogon sorghum*), known locally as *targhara juári*, is sown chiefly in the Sariáb circle of the Quetta tahsíl and the average annual area under cultivation is about 210 acres. It is almost all cut green and used as fodder in the Quetta bazar.

Millets. (*Azhdan* and *ghosht*).

Millets and other minor crops are sown in an area which averages about 400 acres yearly. Millets are chiefly grown in the hilly parts of Pishín and Toba, the method of cultivation resembling that followed for maize. Millets, however, ripen about twenty days before *badághar*. The grain is used for food by Kákars and Achakzais in the form of cakes and also of porridge.

Stimulants. Tobacco (*Nicotiana tabacum*).

Tobacco is grown to a small extent in Pishín, Quetta, and Shorarúd, the average area which is annually cropped being about 8 acres in the Quetta, and 21 acres in the Pishín tahsíl. In the latter tahsíl, the largest area lies in the Lora Kákari and Alízai circles. The cultivation appears to be on the decrease. Three varieties are known from the localities from

which the seed has been imported i.e. *mastungi*, *kandahári* and *tabbasi*. The last named is also called *tirkha* and is said to be grown in large quantities in Khazobi, a district in Kandahár. *Kandahári* and *mastungi* tobacco is used for smoking, while *tabbasi* is used for chewing (*naswár*). For chewing, the leaves are pounded, and the ashes of *umán* (*Ephedra pachyclada*) or slaked lime are mixed with it. The proportion of *umán* ashes to tobacco is as 1 to 3 and of lime as 1 to 5. Chewing is much more common, especially among the Kákars, than smoking or the use of snuff, and there are few adult males who are not addicted to the habit.

Pasta zmakka or soft clay soil is considered best suited for tobacco cultivation. In March it is cleaned, pulverised, smoothed and well manured, the operation being repeated three or four times. In an acre of land 20 to 50 donkey or bullock loads (*kawára*) of manure are used, the best manure being rotten cow-dung to which ashes have been added.

For seedlings, a small bed is prepared and filled with water and the seed is sprinkled on the water, after which ashes are also spread on it. The bed is then watered every day for three days, and thereafter every fourth day. The seed, which is sown from April to June, germinates in about 8 days and the seedlings (*panérae*) are ready in 30 to 40 days.

In June and July the seedlings are carefully transplanted. They are set about nine inches apart in *charis* or beds which have been previously prepared. In Pishín, a little manure is added to the hole in which each seedling is inserted. The beds are watered every day for three days, then every second or third day for a fortnight, and thereafter once a week or once a fortnight, according to the nature of the soil and the amount of water available. Constant weeding is now required, and any side shoots, which appear on the stem, are nipped off. When the plant is a month old 5 to 8 leaves are allowed to remain on the stem, and, if the plant is not to be allowed to seed, the head is also lopped off.

The leaves mature in 2½ to 3½ months and are ready to be harvested between the 15th of September and 15th of October. The plants are cut and are either allowed to remain from 6 to 12 days on the field, or are spread on the roof of the cultivator's house and dried in the sun. They must be turned every three or four days. When dry, the leaves are stripped off the stems. In Pishín, a second crop is sometimes obtained from the same root about a month after the first harvest, especially in strong well manured soils, but the flavour of such tobacco is poor.

No experiments have been made, but the tahsíldár of Pishín has estimated the produce per acre at about 25 maunds. Some American tobacco was grown as an experiment in Woodcock Spinney at Quetta in 1903 and proved successful.

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Fodder crops.
Lucerne.

The only crop grown especially for fodder is *spéshte*—lucerne (*Medicago sativa*). It appears to be indigenous to the country and was undoubtedly cultivated in the District long before its occupation by the British, but the amount was limited. Owing to the development of Quetta, the demand for it has largely increased and a corresponding expansion has taken place in its cultivation. In the Quetta and Pishín tahsíls the average annual area under lucerne up to 1901-2 was about 1,922 acres: 1,083 acres in Quetta and 839 acres in Pishín. It is also grown in Chaman and Shorarúd.

If rain occurs in July and August, the cultivation of land intended for lucerne is begun by its being manured and ploughed twice. If there is no rain, the land is first watered and then ploughed. Nothing is now done to it until about the end of February or beginning of March when it is watered and, as soon as the surface is dry, barley is sown broadcast and ploughed in and the field is harrowed smooth. The ground is then parcelled out into plots and about the middle of April, the lucerne seed is sown broadcast with the barley, and the beds are filled with water (*kharkáwa*). Four days later when the lucerne plants begin to appear, another watering is required and again after five days. Subsequent waterings are given at intervals of ten to twelve days. The barley is cut, when half ripe, about the end of May, and at the same time the first crop of lucerne—*gunda darao*—is also obtained. The fields must be watered immediately afterwards. Three or four cuttings (*khush darao*) take place up to the end of September. At the beginning of October cattle and sheep are let loose to browse the short stems (*chond*).

Another system of cultivation, which is followed in a few places, is for the land to be manured and ploughed twice in March, after which it is watered in May and maize is sown, to be followed by lucerne when the maize plants are about a foot above the ground. The maize is cut green in September but the lucerne is allowed to remain and, after being manured and watered in the following March, is ready for cutting in April.

The seed used in the District is of two kinds and known as *mastungi* and *kandahári* from the localities from which it is obtained. The first sells at from Rs. 12 to Rs. 15 and the second at Rs. 13-8 per maund. The former is a comparatively heavy cropper. Lucerne fields should be manured with well rotten manure every year in March. The best manure is sheep, goat, camel or cow dung, with which about one-third of dry earth has been mixed. The seed once sown lasts from six to seven years, and produces five or six crops in a year. The crop is best in its second, third and fourth years, but deteriorates after this. When the period of cropping has finished, the

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roots (*mundán*) are dug out and given to cattle as fodder and the land is allowed to lie fallow for a year, after which maize or some other crop is raised. The field is not again cropped with lucerne for at least three years and generally not for five years.

A pound of Canadian lucerne seed was imported in the autumn of 1903, half of which was sown in April 1904, in a bed at the Woodcock Spinney near Quetta and proved successful. Lucerne seed is grown at Kili Shah Sawár, Lora Kakari and Manzakai in Pishín, the best being produced in the first named village. To obtain the seed, irrigation is stopped when the plant has begun to flower to enable the seed to ripen.

If lucerne is not regularly watered, it is attacked by *gurai* or *shafta*, a kind of gum appearing on the leaves and stopping their growth. A crop so affected is immediately cut and dried, and the next is generally found to be free from the disease. Moist, cloudy, windless weather brings caterpillars, called *tora ghomashi*, which do much damage. Cutting and drying is the only remedy for this also.

Green lucerne is given to horses and cattle, sometimes alone and sometimes chopped and mixed with *bhúsa*. Care should, however, be taken as to the quantity of green lucerne given to cloven footed animals, cows in particular, as they relish it so much that they overeat themselves and burst, unless promptly treated. The remedy usually adopted for an animal in this state is a bottle of mustard oil, which should be given immediately any swelling is noticed, and a small bundle of tender willow sticks which should be kept in the mouth for the animal to chew. The Kandahár willow is the best. Gentle exercise should also be given.

For human consumption, the tender leaves, which appear after the first cutting, are sometimes cooked as vegetables, and the fresh leaves are also eaten with salt.

In the villages near Quetta and elsewhere such lucerne as is not sold green is made into bundles (*mohra*) and dried. In drying, it loses about four-fifths of its weight. The dry lucerne is given mixed with *bhúsa* to horses and occasionally to cattle during the winter.

Green lucerne is sold in the District by plots (*kurd*), and in Quetta and other bazars by the maund; the price rises from about 4 annas in April and May to about 8 annas in June and July and 10 annas to 12 annas a maund in August and September. Dry lucerne is sold outside the bazars by bundles, 20 to 40 for a rupee; they are sold by weight in the bazars, the price varying from R. 1-6 to Rs. 2-8 a maund.

Paspalum dilatatum.

In connection with the subject of fodder crops, mention may be made of experiments which have been made with *Paspalum*

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dilatatum or Golden Crown. The seed used was obtained from Australia, into which country it is said to have been introduced from America. It is deep rooting, reaching 18 inches or more below surface, and once established is capable of looking after its own existence, and yields large quantities of fodder which is more fattening than lucerne. On first introduction, the only successful experiment was that made by Mr. Anderson, Municipal Secretary of Quetta and further trials on these lines have given good results. The Superintendent of Arboriculture summarised them in 1903 in a circular to cultivators in which he advocated broadcast sowings in dry weather, to be followed by watering every week or ten days until the young plants were strong enough for transplantation. After this, watering must be continued until the roots of the plant reach far enough below the surface to obtain the sub-soil moisture for their subsistence.

Manure and rotation.

It will be seen from what has been said above that manure is only occasionally used for the principal food grain crops, and that its employment is generally restricted to places close to villages. Lands in which melons, vegetables, lucerne and tobacco are grown require thorough manuring, the manure used being cattle, sheep, goat, camel, horse and donkey dung. The cultivators, living in the villages round Quetta, fully appreciate the value of manure for such crops and purchase the rubbish and nightsoil of the town for the purpose The *zamíndárs* also buy most of the refuse and the horse and cattle dung available in the Quetta cantonment and carry them to their lands. A cart containing 5 to 6 maunds fetches about 8 annas.

Dry crop lands are cultivated every year, if the rainfall be timely and sufficient. All irrigated lands are, if possible, allowed one or two fallows unless manure is used. Well manured lands near Quetta sometimes yield two crops in a year, barley being followed by *juári*. No regular system of rotation of crops is followed, but successive crops of lucerne are not sown on the same ground and potatoes are followed by wheat or maize. In Shorarúd wheat is generally followed by melons or maize. In Chaman the same field is sometimes sown continuously with wheat for four or five years after which it is allowed to lie fallow for two or three years.

Fruit and vegetable products.

Fruit culture is one of the most promising industries in the District and is rapidly developing. Between 1897 and 1903, the area under gardens in Quetta increased by 13 per cent., and it would appear to have been since extending at an even more rapid rate. In the two tahsíls of Quetta and Pishín the area under orchards and gardens was about 1,300 acres in 1903 and along the Khwája Amrán Range every little spring possesses its vineyard and orchard. The natives allege that a century ago very few fruit trees existed, but that a great impetus was given to the growing of fruit trees by Abdulla

Khán, Achakzai, in the early part of the nineteenth century. He planted many trees in Kila Abdulla whence the cultivation has extended to other parts of the District. AGRICULTURE.

The places where fruit is most grown are the *kárézes* in Chaman and the slopes of the Khwája Amrán Range; Kila Abdulla, Gulistán, Ináyat Ulláh Káréz, Arambi, Amzari and Kamálzai in Pishín; and Kiráni, Sariáb, Kási and Quetta in the Quetta tahsíl. Vineyards are distinguished by the people as *angúri bágh* and orchards as *sar darakht.* The latter contain apricot (*zardálú*), peaches (*shaftálú*), nectarines (*shalíl*), pomegranates (*anár*), mulberries (*tút*), quinces (*bihi*), pears (*náshpáti*, also called *amrat*), almonds (*bádám*), plums (*álúchá*), damsons (*álú bukhárá*), apples (*seb*), figs (*anjír*) and a few walnuts.

Local expert opinion assigns the following periods at which fruit trees begin to bear fruit and continue to do so:

Name of fruit tree.	Age at which fruiting commences.	Period for which the tree bears fruit.
Vine	4 years	100 years.
Apricot	6 ,, ...	40 ,,
Mulberry	5 ,, ...	Anything up to 500 years.
Peach	5 ,, ...	3 to 5 years.
Pomegranate ...	4 ,, ...	No limit.
Quince	7 ,, ...	10 to 12 years.
Pear	12 ,, ...	60 to 70 ,,
Almond	8 ,, ...	20 ,,
Plum	4 ,, ...	10 ,,
Fig	3 ,, ...	No limit.
Apple	7 ,, ...	20 years.
Damson	6 ,, ...	40 ,,
Walnut	12 ,, ...	No limit.

No less than nineteen varieties of grapes are recognised in the District, and a description of each is given below. Viticulture.

Lál. The grape is delicious, juicy, and sweet and is the most popular for local consumption. The skin is, however, very thin and delicate and it is unfit, therefore, for export. It has a creamy yellow colour and the fruit is large and almost round. The *lál* grape is of three varieties known as *yakdána*, *spín lál*, and *sra lál.* The *yakdána* is almost seedless and half of the grapes on a bunch are small and half large. In a bunch of *spín lál* all the grapes are of uniform size; the *sra lál* is only grown in Kandahár and not in Baluchistán. *Yakdána* and *spín lál* are grown in small quantities in Kila Abdulla, Pír Alízai, Pishín, Kiráni and Gulistán, the last named place having the best. The grapes ripen in September and last up to the end of October. A bunch is generally about 9 inches long, and 12 in circumference at the top and 8½ inches in the middle. Price 6 to 8 annas a seer.

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Sáhibi. Next to *lál*, the *sáhibi* grape is considered best for local consumption; it is grown in small quantities in Gulistán, Pír Alízai and Kamálzai in Pishín and in Kási in Quetta. The fruit is longish, oval, light red in colour, and has a soft skin. A bunch is about $8\frac{1}{2}$ inches long and the thickest part is 9 inches in circumference; it weighs from $\frac{3}{4}$ to $1\frac{1}{4}$ seers. It ripens about the 15th of August and lasts up to the middle of November.

Haita. A large, oval shaped grape with a hard skin. The colour is green, tinged with yellow. It is very lasting and is the grape commonly packed with cotton in small round boxes and sold in Indian bazars. The taste is sweet and increases with keeping. *Haita* grapes are sold fresh from August to the end of November. The bunches are 12 to 16 inches long and some weigh $2\frac{1}{2}$ seers. In Kandahár, *haita* grapes are made into raisins (*ábjosh*), by dipping the bunches for a short time in boiling water mixed with lime and carbonate of soda, and then drying them in the sun. *Munakka* is also made from them by drying the bunches on a mat in the sun. The *haita* grape is much cultivated for export as, owing to its hard skin, it travels well.

Kishmishi. The *kishmishi* grape is of three varieties: *sra*, *spín* and *shando kháni*. *Spín* and *sra* alone are grown in the Quetta-Pishín District; *shando kháni* is grown in Kandahár. *Sra kishmishi*, as its name implies, is light purple in colour. Its characteristics are its delicacy, soft skin, and small size. It is as sweet as *spín kishmishi*, but large quantities can be eaten without harm, which is not the case with the latter. Kandahárís make raisins (*artawae*) from it. It begins to ripen about the 25th of August and lasts up to the 15th of October. The bunches are long and weigh from about half a seer to one seer. *Spín kishmishi* is a small green grape, the fruit of which is oblong with a greenish, hard skin. The taste is excellent but it is said to be harmful if eaten in large quantities. It is found in all parts of the District, especially in Quetta and along the Khwája Amrán. It begins to ripen in August and lasts up to the end of October and is exported to parts of India. A bunch contains a large number of grapes; it is about $7\frac{1}{2}$ inches long, and of medium size, and weighs about three quarters of a seer.

Khair-i-ghulámán or *Khaiáh-i-ghulámán.* This is a large round, dark, close-growing grape with a hard skin; it is sour to taste. It is one of the latest to ripen and procurable in September and October. It is suitable for export but is not extensively grown except in some of the gardens belonging to Europeans in Quetta. The bunches are large and weigh from 1 to $2\frac{1}{4}$ seers.

Husaini. A long, green grape with a soft skin. It is distinguished by the loose growth of the fruit, and the fact that

the body of each narrows in the centre, having, as it were, a waist. The bunches are small weighing $\frac{1}{4}$ to $\frac{3}{4}$ of a seer. It grows in Gulistán, Mazarri, Kamálzai, Arambi and Sariáb, and begins to ripen about the beginning of August and lasts till the middle of October. It is unfit for export. AGRICULTURE.

Sheikh ali. A medium-sized, green grape, the fruit of which is somewhat oval and grows very thick and close. Owing to the softness of its skin, it is unfit for export. The taste is somewhat sour. A bunch weighs from 1 to 2 seers. Price at the height of the season about $2\frac{1}{2}$ annas per seer.

Kalamakk. A green grape; the main stem of the bunch has several offshoots, on which the grapes form. A bunch weighs 1 to 2 seers and is about 12 to 16 inches long and $7\frac{1}{4}$ inches in circumference. The fruit is oblong and of medium size, larger than *spín kishmishi* and smaller than *haita.* It is a late ripener procurable between September and the 15th of November. The taste is fair.

Kuláh ghochak or kuddak. A round, green grape, with a small indentation at the end, whence it is called *kuláh ghochak* by the Kandaháris and *kuddak* by the inhabitants of Kiráni. Sweet to taste. Procurable during September and October. Very rare in the Quetta-Pishín District. A bunch weighs about half a seer.

Amíri. A medium-sized, soft skinned, green grape, found, though rarely, in Gulistán and Pishín. Is very delicious eating. A bunch weighs from $\frac{1}{2}$ to 1 seer. Procurable from July 15 to end of August.

Askari. Is of the *spín kishmishi* variety, but has a harder skin and ripens earlier. It is also not so sweet. Obtainable from August 1 to the end of September. It is to be found in small quantities in Gulistán. The bunches are small and very delicate.

Khalíli. An early grape ripening about the 20th of June. The fruit is dark green and oval in shape, and is sour and insipid to taste. The bunches are small and seldom weigh more than 12 ozs.

Raocha. The earliest of all grapes, ripening about the 10th of June and lasting for a fortnight. A small, round, light green grape with a soft and delicate skin owing to which it is unfit for export. The fruit sometimes has a reddish tinge, and is very closely set. A bunch weighs from $\frac{1}{4}$ to $\frac{1}{2}$ seer. Taste somewhat insipid.

Khál chíni. Grows everywhere in small quantities. Is a light purple grape with a large seed and very little taste. Indeed, it is generally sour. The bunches are small and weigh from $\frac{1}{4}$ to $\frac{1}{2}$ seer. It ripens early and lasts for about a fortnight in June.

Fakhri. A light green grape long in shape, and with a

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soft skin. A bunch weighs from ¼ to ½ seer. Ripens in the last week of June and lasts for about 15 days. Is not common.

Tandán. A large round green grape of inferior quality. It is difficult to distinguish from the *lál* variety except in taste. *Tandán* is somewhat insipid, but its characteristic is the large amount of juice which it contains. In Kandahár the juice is extracted and boiled and is afterwards kept for use as a relish. A bunch weighs about 1¼ seer. The bunches are small, about 7½ inches long and 7¼ inches in circumference at the top. Ripens in September.

Siáh or *tor.*—Ripens early and is ready about the middle of July. Fruit oval, dark in colour, and fairly sweet. The bunches are long and conical and weigh from about ½ lb. to 1 lb. In Kandahár, black *kishmish* is made of these grapes and called *tori wiski.*

Of all the above, those most widely distributed are *haita* and *spín kishmishi*, which are followed by *kalamakk* and *husaini*. *Tor, sra kishmishi* and *tandán* come next in order. The rest are only to be met with occasionally.

The grape season lasts from about the middle of June to about the end of November. It is at its height in July and August.

Vines are either grown in trenches or are trained on posts or other trees; the former method is know as *jowaki* and the latter as *sawára tak*. *Siáh zamín* or hard black soil, is preferred for *spín kishmishi; sra* or *surkhak*, a hard reddish soil is good for *haita;* a sandy soil containing gravel (*shaghana* or *dabrína*) is considered best for all other varieties. When a plot has been selected for viticulture on the *jowaki* method, a long main trench is dug, running from south to north and called *sámáni*, from which other branch trenches (*joa*) are made, running east to west, at intervals of 12 to 18 feet. Ordinarily the *joa* is about 2½ feet broad with the same depth. On the south side of the branch trenches, pits (*ghácocha*) are dug, about 2½ feet square, down to the level of the *sámáni* or *joa*. Vines are generally pruned (*tákburi*) in the first fortnight of March and at this time three cuttings are inserted in each hole, after which the trenches must be watered within ten days from the day the cuttings are planted. Care is taken that only two joints of each cutting are allowed to remain exposed above ground. Some of them sprout about the end of March, while others are delayed till the *bád-i garm*, a season, which lasts for about a month from the 20th of June. After planting and during the *bád i-garm* the cuttings must be watered regularly at intervals of 9 or 10 days, and the trenches must be carefully weeded. After the *bád-i-garm* the intervals of watering are increased to 18 days, until Canopus appears in September, when waterings may cease. At the beginning of

January water is again given two or three times, this watering being known as *yakh áb* and being very important.

In March of the second year the vines are pruned, two to three joints only being retained above the point to which the irrigation water reaches. The top of the vine is now inserted in a hole in the wall of the cross trench to protect it from sun and wind until it begins to shoot. The earth of the pit is stirred, and about a seer of manure, preferably cow-dung, is put in each and covered with earth. Horse, sheep, goat or camel dung is considered injurious to the vine. Within ten days of manuring, watering takes place and the routine of watering and weeding followed in the first year is continued up to the following March.

In March of the third year, two of the three stocks originally planted (*dogána*) are either taken out with the roots and transplanted or are cut off and thrown away; the third (*yaka*) and strongest stock is allowed to remain. The vines are then pruned, three joints being retained, and the top being as before inserted in the *joa* wall. Watering and weeding continue during the year as in the two previous ones.

In March of the fourth year the vines are again pruned, five joints of the main stock, and two offshoots or branches each with three joints being retained. The tops of these three branches are inserted in the side of the trench, and watering and weeding continue as before. This year each branch has two or three bunches of grapes. Pruning is repeated in March of the fifth year, each vine is well manured, and the sides of the trenches are raised and sloped off. In subsequent years, pruning and manuring are done in March, dead branches (*khushka*) are removed in April and the young shoots that appear close to the stock (*kharlao*) are also cut off. Care must be taken not to water the vines in April when in flower.

Under the *sawára ták* system, the only difference of cultivation is that longer branches are retained at the time of pruning. In the fourth year a platform (*chela*) is erected, to which the branches of the vines are tied. *Haita* grapes are generally grown on this method. *Sawára ták* vines produce a greater number of bunches but the grapes are small and delicate, do not keep long, and are not fit for export.

No fruit is produced if the vines are watered in April, when in flower; they also suffer from cold wind or hail at this time of year. Horse dung manure, excessive manuring, or overwatering in summer when there is no wind, causes *shal*, the fruit becoming blackish in colour and giving off an unpleasant smell. A free current of air to the vines is most necessary. If the soil is too strong for the vine, slits are made in the stock and some of the sap is allowed to exude.

Another disease is known as *shafta* and is said to be caused

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by excessive rain or absence of wind. A gummy substance appears on the leaves and the grapes shrivel.

All the grapes in the District are sold fresh and their export is increasing every year. The season is at its height in August when two or three truck loads are sent away by train daily. The method of packing leaves much to be desired and the grapes arrive at their destination much damaged. In Kandahár, grapes are preserved in the shape of sultanas (*kishmish*) and of the preparations known as *ábjosh* (raisins), *munakka*, *artáwas* and *toré uskai*.

At the height of the season good grapes can be bought in the Quetta bazar for about 5 annas a seer, but in remoter parts they are half that price and inferior kinds can be got at 1 anna per seer.

Apricot.

The apricot (*zardálu*) is probably the most common fruit tree in the District. The varieties grown include *nari pas ras*, which is pale coloured, sweet, almondlike in shape and considered the best; *qaisi* a sweet, oblong apricot; *shakarpára*; *súr baghali*, which is round and, as the name implies, has a purple tinge on one side; *bád rangi* or *chár maghz* which generally has a double kernel; and *chigháli*, an inferior kind which is chiefly found in the hilly parts of the District. The best kinds are found in the orchards in Kila Abdulla, Gulistán, Ináyat Ullah Káréz, Iskán Káréz, Kamálzai, Pír Alízai, Kási, Hudda, Sariáb and Kiráni, and the *chigháli* variety is mostly met with in Hanna, Barshor, and in the ravines in Toba.

As apricot stocks are used for the budding not only of apricots but other kinds of fruit, special care is given to their propagation. A soft soil containing silt is preferred for apricot growing. If poor, it is first manured; cow-dung being the best. About the end of January, the ground is twice ploughed, pulverised and smoothed with the *mála*, and furrows are afterwards made. The stones (*mandakka* or *hadúkae*) of the *chigháli* variety are now soaked in water for 24 hours and planted in the furrows about 9 inches apart, after which the ground is watered. *Chigháli* stones are selected because they are bitter and insects will not damage them. Irrigation is continued at intervals of 10 or 12 days up to November, except during the *bád-i-garm* season when watering is required once a week, and the ground round the young plants is kept carefully weeded and is occasionally stirred. These processes are continued up to the time of transplantation in March of the fourth year. Budding, to which reference will be made presently, takes place at the end of June and in July of the third year.

The stocks are removed on transplantation, to pits which have been dug in land deeply ploughed and carefully prepared during the previous September or October. The holes are

about 2 feet deep and 12 to 18 feet apart and after the stocks (*nihál*) have been put into them, moist and afterwards dry earth is added and the whole well rammed home. The trees yield fruit at the end of four years. The space between the trees which would otherwise be wasted, is utilised for growing lucerne which is sown either in the autumn or spring and is dug up at the end of four or five years by which time the shade of the trees damages its growth. AGRICULTURE.

Every orchard is irrigated every year twice or thrice in January—*yakhao*. The advantages of this important watering are, firstly the retention of the moisture by the ground to the end of the winter and well on into the spring, and secondly the prevention of too early blossoming, which might suffer from cold winds and frost. Another watering is sometimes given at the beginning of March with the same object. Pruning and watering takes place in April, and watering is continued about once a month until the fruit has been plucked. Watering is also required during the *bád-i-garm* season and again in autumn when the leaves fall. The latter are not removed but allowed to decay *in situ* as manure. The trees should, if possible, also be manured once a year, at the beginning of March, whilst young.

Uses.

The fruit ripens in June and July and is eaten fresh. In Kandahár the fruit of the *shakarpára* variety is allowed to dry on the trees or is plucked and spread on the ground to dry and constitutes the dried apricots, of which large quantities are exported to India. The number of *shakarpára* trees in the District is small, and, as the fresh fruit finds a ready sale, the fruit is seldom preserved. Such fruit as is preserved and dried is soaked by the people of the country in hot water and used as a relish. Apricot kernels are eaten fresh and are also dried and exported to Sind.

Other trees.

Peaches, plums and damsons are all grown in the same way as apricots, but apricot and almond stocks are generally used for budding.

Mulberry.

Next to the apricot, mulberries are most numerous in the Quetta tahsíl. The best kinds of mulberry (*tút*) are *kishmishi* which has a white, round fruit, and *bédána*, i.e., seedless. Other varieties are the *puláwi*, the *sháh tút* or *khartút* which is sour, the *tor* or black, the *bor* or *khar*, and the inferior kind known as *khalanj* or *shuri*. The natives recognise a male and female tree of each variety; the latter only gives fruit.

Seed for propagation is generally of the *khalanj* or *shuri* variety and is obtained by rubbing the ripe fruit in a closed bag and dipping the bag in water to extract the juice. The seed is then dried and cleaned. Another and more successful method of obtaining the seed is by rubbing the ripe fruit on ropes and

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allowing the seed to stick, after which the ropes are dried in the sun.

The seed is sown in plots containing soft silt, the soil of which is manured, ploughed twice and pulverised at the end of June and during July. The seed is sprinkled in the plot and mixed with the soil by hand, after which it is irrigated for two consecutive days. Watering again takes place when the upper surface is dry. When the seed has been preserved on ropes, the latter are buried in the plot about 2 feet apart. The seeds sprout in 10 to 12 days when water is again given, the process being continued at intervals of a week. Budding in the third year and transplantation in the fourth year takes place as in the case of apricots. A mulberry can only be budded with buds from a tree of its own kind.

Mulberry fruit begins to ripen in the middle of May, unless the cold has been severe when it does so a little later. The mulberry season lasts for about a month and during this time the fruit forms one of the chief articles of diet of the people. It is chiefly eaten raw and is very laxative. Dried mulberries are imported from Kandahár. The *shahtút* ripens later, in June, and lasts up to about the end of July.

In Japan, and for experiments which are being made in Mysore, a coppice growth of mulberry is considered best for sericultural purposes. In 1904 a good many trees in Kiráni were stripped for feeding silk worms and it was found that in the following season these trees produced both more leaves and better fruit. The leaves of the *shahtút* are useless for purposes of sericulture.

Budding and grafting.

Except vines and pomegranates which are obtained from cuttings, most other good fruit trees are propagated by budding. The best stocks are apricots, which can be grafted or budded either with its own kind or with almonds, peaches, plums, and damsons. Apples can be grafted on pear stocks; almond stocks are good for peaches; while almonds can be budded on peaches or plums. Around Kila Abdulla and Gulistán there are single stocks of the *chigháli* apricot bearing almonds, peaches and plums. Both budding and grafting are expressed by a single word *paiwand* but, to distinguish between the two, the former is called *baghali paiwand* and the latter *skanna paiwand* from the *skanna* or grafting chisel. Budding is much more common than grafting, the latter only being resorted to in the case of large trees. Its advantage lies in the rapid growth made by the grafts which may be expected to bear within two years. The budding season lasts from the middle of June to the end of July. For budding, a T shaped slit is made in the skin of the branch to be budded, and the bud after insertion is tied with strips of mulberry bark. String is not used. The top of the stock (*nihál*) is broken about a foot above the point budded, and

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allowed to hang over the bud for shade. The bud is inserted on the side from which the prevailing wind blows; in Pishín, therefore, it will nearly always be found on the west side of a tree. A shoot (*zaka*) is made in about eight days, and care is taken that all shoots, except those of the bud, are afterwards rubbed off. In the case of trees which are four or five years old, all the branches are sawn off short and a bud inserted in each, the ends at the same time being covered with mud.

For grafting, the stock is prepared during the *bád-i-garm* season, and a hole is made in it with a grafting chisel. The lower end of the graft is cut smooth in the shape of a wedge, which is a trifle thicker on one side than on the other, and is inserted in the slit, which is then stuffed with cotton and mud. It is then surrounded with earth and watered regularly at intervals of from 7 to 12 days. The shoots appear in about a fortnight. Vines are grafted during the pruning season in March and not in June and July.

Pálézát.

The cultivation of cucurbitaceous crops (*pálézát*), which, term includes various kinds of sweet melons (*kharbúza* or *khatakai*), water melons (*tarbúz*), cucumbers (*bádrang*), snake cucumbers (*chambar khiál*) and pumpkins and gourd (*kadú*), is indigenous to the country, but its extent was limited in pre-British days and melons were grown chiefly for home consumption. Since the British occupation, the cultivation of these crops has received a great stimulus, as the produce not only finds a ready market in Quetta and other bazars but sweet melons, especially of the *sarda* variety, are exported to various parts of India including Calcutta, Simla, and Bombay. The average area annually brought under these crops in the Quetta tahsíl is about 900 acres and in Pishín 1,075 acres (1902) and it appears to be constantly increasing. Melons are also grown in the Chaman Sahara and under the *kárézes* in Shorarúd.

Sweet melons.

The two best known varieties of sweet melons are the *garma* and *sarda*. These names are derived from the times, i.e., the hot or cold season, when they mature; the former ripening in summer and the latter in autumn. Both kinds are equally popular among the people, but some of the *garma* varieties possess most flavour. The best kinds of *garma* are (i) Alaf kháni (ii) Tárímae (iii) Kalandarae or Shín Pattadár (iv) Sufaidak and (v) Súr. The Alaf kháni is said to be an importation from Turkistán through Kandahár. It is almost oval and has small marks on it, and contains a hard yellowish pulp. The *tárímae* is also an imported variety from Turkistán; it is of two varieties, the first being oval with a soft green skin and white pulp, and the other longish with a hard green skin and green pulp. The *shín pattadár* or *kalandarae*, has a green skin with stripes, generally weighs from 2 to 6 lb., contains a very small quantity of seed, and the pulp is thicker and sweeter than that of all other kinds. *Sufaidak* means whitish, and the name is derived

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from the colour of the melon. The *súr* is longish and it has a yellow hard skin and reddish pulp. It ripens later than other *garma* varieties and its flavour is particularly sweet.

Of *sardas* or cold melons, five varieties are identified. They are known as *kábulae* (from Kábul), *kandahári* (from Kandahár), *tehránae* (from Tehrán), *herátae* (from Herát) and *mashadae* (from Meshed). The *kábulae* and *kandahári* varieties resemble one another in flavour and both have a good thick pulp but the *kábulae* is round while the *kandahári* is oval. The latter is sometimes called *gidar urbuzai* owing to its resemblance to a jackal's muzzle. *Tehránae* melons are oval but pointed towards the head. Their colour is green and flavour sweet. The *herátae* is the commonest variety of *sarda*. Its colour is yellow and it is a long oval in shape. The skin is hard and bears raised lines all over it. The pulp is particularly delicious and firm and improves with keeping. It is the most easily preserved of all the melons sold in Quetta and, in consequence, is largely exported to India, especially to the Punjab, where it fetches a high price. *Herátae*, known as *shín herátae* or *shín mashadae* is green like the *tárímae* but it is not extensively grown.

A third variety of melons is the *dastambol*, i.e., the melon to be carried in the hand for its smell. It is not eaten but is cultivated for its pleasant odour. Six varieties of it are recognised and known as *kharwári dastambol*, the largest kind weighing from 1 to 3½ seers; *gardai kharwári dastambol*, which is a little smaller than the last named; *shínag*, the shape of which resembles an egg; *kaddu sari*, shaped like a pumpkin; *mashanga* which is divided into three sub-varieties, *gardai ghata*, *gardai kuchnai* and *uzda mirzái*; and *chabúti*. The latter generally grows in maize fields.

Water melons (*hindwána*) are raised either from small (*wali zanri*) or large seed (*loé zanri*). Water melons with small seeds are the best. Three varieties are recognised locally: *kaddúsargai*, *gardai* and *uzhda*. The *kaddúsargai*, or *kaddu sari* variety is generally green and white in colour and has a very stiff skin and red pulp. It is the most durable kind and has most flavour. *Gardai* is of various colours: whitish, green, black and striped, or green and white (*kamara*). The seeds, too, vary in colour being black, reddish, yellow and brown. It is renowned for its flavour. *Uzhda*, a variety which is said to be indigenous to Pishín, is of various colours and grows to a very large size. The flavour is sweet. It is especially suitable to sandy dry-crop lands. When ripe, it is cut into pieces, dried in the shade and eaten with bread in the winter. This is done by wrapping it in a hot cake, a process which causes the pulp to melt on the bread.

Among other cucurbitaceous crops are cucumbers, snake cucumbers and several varieties of gourd. The cucumber

(*bádrang*) is said to have been known in the District from ancient times. Its name is possibly derived from its flatulent (*bádi*) qualities. It matures earlier than melons and is eaten raw with salt. The snake cucumber (*chambar khiál*) is eaten in the same way but it is rather tasteless. Several varieties of pumpkin are raised as vegetables and many of them grow to an enormous size. The commonest are the large round and long oval. Another kind is of the shape of the figure 8 and is sometimes enclosed in a wooden case and made into snuff cases. Most pumpkins are eaten fresh, but some are dried and preserved for use as a winter vegetable.

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Methods of cultivation.

The method of cultivation indigenous to the country is known as *chhat*, and is carried on by one or other of the processes known as *páshki*, *kára* and *ták*. Under the *páshki* system the land is ploughed once or twice and then watered, the process being repeated at intervals for some 2½ to 3 months before sowing. When the soil is nearly dry, the seed is sown broadcast and the field is re-ploughed and harrowed, after which beds are made, and the land is again watered after a week. Poor soil is manured before the first watering (*náwa*). For *kára* cultivation the ground is prepared and watered in the same way as for *páshki*, after which furrows (*kara*) are made with the help of the plough and three to five seeds are dropped in the furrow at intervals 2 feet apart. They are then covered with earth. If two plants happen to come up together one is taken away as two plants injure one another. *Ták* cultivation is entirely by manual labour and no plough is used, but the soil is turned over with the spade. The produce on *ták* lands is generally poor.

But the best way of growing melons is in trenches, the system being known as *jowaki* by the Kandahári s, who introduced it into the District, and as *chari* by the local cultivators. For *jowaki* sowings the soil is ploughed three or four times and trenches made, the ridges of the trenches being beaten firm to prevent the escape of water when they are irrigated. A space of some 4 to 6 feet of level ground is generally left between the trenches over which the melons may trail. As soon as the trenches are ready they are watered, and the next day the seed is sown on both sides of each trench. This is done by placing about five seeds at intervals of 1 to 1½ feet. Another watering takes place at the end of a week and, at the same time, small excavations, called *ghaocha* are made in the sides of the trenches close below the roots, when they are filled with a little manure or with fresh *ghurezakka* also called *busunduk*, (*Sophora alopecuroides*) after which they are again covered in. The *ghurezakka* not only strengthens the growth of the plants but helps to retain the moisture round the roots. Ten or twelve days later thinning has to be carried out and is called

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yaka. Only single plants are henceforth allowed to remain. A few days afterwards the stems of such plants as are too forward and are likely, therefore, to be injured by the wind, are covered with earth, a process called *khák dast*. The melon plant, as it matures, usually produces three shoots and the central one is now cut off to cause the others to spread. The next process is that of *khákbel*, each plant being trained over the level ground above the trenches, and the roots being covered with earth to retain the moisture and obviate the necessity of constant watering. *Joe kár* follows, the trenches being deepened and the moist earth heaped round the roots of the plants above.

When the plants are in flower in June, all small and poor flowers and superfluous trails are taken off and thrown away, the process being known as *gulgíri*. Only the best flowers along the trails are retained. The small melons (*mora*), which appear about this time, are liable to injury from a fly (*carpomyia parctalina*) and, for their protection are covered with earth, but are exhumed when a little bigger as at this stage the fly does no harm.* Only two melons are allowed on each plant as more do not grow to full size. *Garma* melons ripen in three months after sowing, and *sarda* melons in about four and a half months.

Melon plants require great attention and are easily susceptible of disease. Late frosts and cold winds in the spring cause the young and tender plants to wither, while heavy rain causes them to blacken (*shafta*) and, an east wind overturns the plants and damages them. The growth of the plants is sometimes much hindered by a weed known as *shínguli* or *matsotsak*. But the two worst enemies of the melon are insects (*kirm*) which eat up the roots, and internal worms (*kirmi-i-andrúni*) which are generated by the yellow fly (*carpomyia parctalina*) already referred to laying its eggs in the young fruit, when of the size of a walnut. The melon cultivator (*pálézwán* or *pálezkár*) takes much care to cut off all flowers and fruit which are affected by the fly. He can recognise them by the white spot which marks the fly's visit.

No experiments have been made as to the outturn of melon crops, but it has been estimated that the produce of an acre of good melons near Quetta, yields from 150 to 200 rupees. All the melons and other cucurbitaceous produce, raised near the bazars are sold fresh. Round Quetta a good many of the melon fields are sold to Quetta shopkeepers for a lump sum. Sweet melons at the beginning of the season sell at about 3 annas per seer and later on at 9 pies per seer, but towards the end of the season the prices again rise to about 8 annas a seer for *sarda* melons. The water-melon is always cheaper than the sweet melon, and its price varies from 6 pies to 1 anna 6 pies a seer. It is chiefly used by the poorer classes.

* See *Indian Museum Notes*, Vol. III, No. 6.

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In places remote from the railway, both melons and water-melons are generally bartered for grain. The Ghilzai nomads carry them on their donkeys and retail them at villages where there is no local production.

The sweet melon, eaten after food, is considered to assist digestion and to be peculiarly invigorating, but the water-melon, if so taken, is believed to cause dyspepsia. Meat eaten shortly after a water-melon produces colic. The natives consume a vast quantity of melons and cases sometimes occur in which natives suffering from a surfeit of melons develop symptoms which are difficult to diagnose from those of cholera. There is a general belief among the natives that fever is caused by excessive consumption of melons.

As the *jowaki* method entails much labour and attention, a *pálézwán* who cultivates on the land and water of another generally gets half the produce; under the *chhat* system his share is one-third. Many of the *pálézwáns* in the District are Kandaháris and Ghilzais, but the local people are now rapidly learning the art of cultivation.

Vegetable production.

Pumpkins, cucumbers and carrots (*zardakka*) appear to have been the only vegetables indigenous to the country, but small quantities of *bánjan* (egg plant) and *pálak* (spinach) used to be grown in Gulistán and Kila Abdulla for the use of the leading Achakzai families. Most of the people were and still are ignorant of the use of kitchen vegetables. Wild plants were, and still are, used as substitutes, such as *injaora* (*Allium sphaerocephalum*) and *raghél* (*Peucedanum Sp.*) which were eaten raw, *zunki*, which was consumed both raw and cooked, and *mirri* or *khurfa* (purslane), *bushki* or *garbust* (*Lepidium draba*), *jámboi* (*Brassica campestris*) and *tor ság* which were boiled and mixed with salt. The use of tender lucerne shoots has already been mentioned. Since the British occupation, the demand for vegetables has largely increased. Many gardens have sprung up in the Quetta civil lines and cantonments, the first having been established by the Commissariat department in the early eighties; gardens have also been laid out at Chaman and Pishín. All kinds both of Indian and English vegetables have been introduced and grow well, the produce lasting from May to December. During the winter the supply comes from the plains, Sibi and elsewhere. Some of the dealers in Quetta have rented lands from local *zamíndárs* and grow vegetables for sale, and the cultivators in the vicinity of Quetta are also beginning to find vegetable production a profitable undertaking. They chiefly grow potatoes (*patáta*), onions, gourds, egg plants, tomatoes, cauliflower and cabbage, ladies' fingers, radishes, spinach, turnips and *methai* (*Trigonella foenumgraecum*). For amateur gardening a calendar compiled in 1893 by Colonel P. D. Jeffreys, Assistant Adjutant-General, Quetta District and

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re-edited with certain additions, by Major A. A. M. Faulknor, Cantonment Magistrate in 1896, contains much useful information. The method of cultivation of potatoes, carrots and onions adopted by the local *zamíndárs* is described later in some detail. For other articles the land has in every case to be thoroughly manured, ploughed, and smoothed, and after the seed has been sown, constant irrigation of the fields is necessary. Imported seed is used except in the case of turnips, onions and radishes. Onions, turnips and radishes intended for seed are dug in October and November and buried in the earth but are replanted in March and seed in July. Before replanting the lower parts of turnips and radishes are lopped off.

Egg plants, tomatoes, cabbages and cauliflowers and ladies' fingers are sown in slight heat in February, transplanted in April and are ready for use in July or later. Early cabbages are ready in July and later kinds in October. Spinach is sown in spring, in May and in July and August. *Methai* is sown in March and is ready in April when it produces one crop; and the same ground is prepared and re-sown in July and produces two crops. Turnips are sown in March and again in July. The long native radish is sown in July and crops from September to November.

Potatoes.

The cultivation of the potato (*Solanum tuberosum*) was unknown in the Quetta-Pishín District before the arrival of the British. Potatoes are said, however, to have been grown in Kalát and Mastung, whence the cultivation was introduced into the Sariáb circle and has since rapidly extended. The area annually cultivated (1904) is about 290 acres of which 283 acres lie in the Quetta tahsíl, the greater portion lying in the Sariáb circle. The varieties grown are three month and six month potatoes. The three-month (*séhmáhi*) variety is reddish in colour, each plant producing 1 to 2 seers; the six-month variety (*shashmáhi*) is white and small, each plant yielding 2 to 4 seers. Three month potatoes are sown between the 1st of March and the 15th of April. If there have been winter rains and the land is moist, it is manured and ploughed two or three times; but if there is not sufficient moisture, it is manured, watered and then ploughed. Potato eyes, or small potatoes, are then planted, about 4 inches apart, on either side of ridges, which are raised about 6 inches high with a trench in the centre, and are then covered with earth from the trenches, after which the latter are irrigated. When the plants are about 4 inches high they are again banked up. They require constant watering, especially when in blossom, and are dug in June. If intended for seed they are left in the ground till October.

The planting of six month potatoes begins about the 15th of March and continues up to about the end of May, and the

potatoes are ready for digging in October. They prefer a soft sandy soil and cow-dung is the best manure. If horse-dung is used, an insect, known as *sozchat*, appears in the potatoes just as they are about to ripen. A tenant employed for potato cultivation in Sariáb generally provides labour and bullocks, and receives one-third of the produce. Though a tenant-at-will, he cannot be ejected until after another crop is raised in the same field. Potatoes are generally followed by white or *waláiti* wheat. Experiments made in the Quetta tahsíl in 1904, showed the produce of the *séhmáhi* and *shashmáhi* potatoes to be 40 maunds per acre. POTATOES.

A few of the people eat potatoes, which are either cooked in the embers or boiled, or fried in *ghí* but most of the produce is sold *in situ* to dealers from the Quetta bazar. The usual price is about Rs. 5 per bag, which contains about 2 maunds. Camels are fond of the potato stalks.

Carrots (*Daucus carota:* Ver. *zardakka*) are of two varieties, the *sra* or purple, and *spína* or white. The former is grown in almost all parts of the District in small quantities, the largest production taking place at Táshrobát in Toba; at Mallazai in Quetta; and at Manzakai and Bagarzai in Pishín. English carrots are grown only in gardens in Quetta. Carrots.

The soil best suited for its growth is *kas* or sandy loam. The land is manured with cow or sheep dung, the latter being considered best, and some hundred donkey loads (equivalent to about 150 maunds) are used in an acre. About the end of June the land is watered (*náwa*), and is ploughed three or four days afterwards (*shudiára*). The soil must be afterwards well pulverised. Sometimes the seed is sown broadcast (*páshki*) and beds are made afterwards, but the general practice is to make trenches about 18 inches deep which are filled with water to a height of about 16 inches. A hollow furrow (*kara*), about 1½ inches deep, is now made along the ridge between the trenches with a hooked stick called *machak*, into which the seed which has been soaked for three days in cold water, and has been mixed with sand in the proportion of 2 to 1, is poured. It is then covered with fine earth. Irrigation is required three days after sowing and at intervals of seven days thereafter.

Careful and constant weeding is required, and special attention has to be given to the eradication of a creeper called *pérwatkae*. The carrots sown in June are called *péshras*, early ripeners, and those sown in July *pasras* or late ripeners. The roots mature about the end of October and are dug in November and December. Sometimes they are left in the ground during winter and dug in March.

Seed used generally to be obtained from Mastung or Kandahár, but local seed is now also used. Two varieties, known as *badal* and *asíl tukhm*, are obtained under different systems.

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Badal tukhm is produced by carrots, which are left in the ground to ripen. It is inferior and produces only non-edible roots which are both pungent in taste, and very hard. To produce *asíl* or genuine seed, the carrots are allowed to remain in the ground during winter and are covered with a layer of earth. They are dug in March, when the lower portions are cut off and the upper parts are planted in specially prepared beds and seed in July.

Some roots of local carrots, which were sent to the Reporter on Economic Products to the Government of India in 1904, were pronounced to be particularly fine specimens. "The carrot is full of taste," says an Afghán proverb, and it is generally, therefore, eaten raw but is sometimes made with *ghí* and sugar into an article called *bagár*. Natives of India living in Quetta and other bazars either pickle it (*kánji*), or cook it in molasses, or roast it in hot embers. The price in the Quetta bazar is from six pies to one anna per seer; in Pishín, Toba and Shorarúd it is generally bartered for wheat, barley, maize and millet. Ghilzai and Kákar nomads buy carrots for about 4 annas a maund on the ground and retail them in the villages in Pishín.

Onions (*Allium cepa*).

The white variety is the only one grown and cultivation begins in March. The land, after receiving sufficient moisture, is ploughed and manured and then reploughed twice. Small narrow beds are then made; the length varies; the width is generally about 5 or 6 feet. The earth is then well pulverised and the seed sown, the ground round it being afterwards turned with a branch. The beds are watered the same day, and four or five days later powdered horse-dung is sprinkled in them after which they are again watered. Till germination, watering is required every fourth or fifth day, and afterwards every tenth to twelfth day. At this time the crop is liable to damage from a weed, called *sauzchar* or *sozchat*, which grows in soil in which horse-dung has been used for the first manuring. Immediate watering is required as a preventative, on the first appearance of the weed. Watering continues till the appearance of Canopus at the beginning of September. When the onions begin to mature they are well trodden in with the feet to cause them to expand. They are dug in October.

Extension of cultivation.

The people are all agreed that there has been a great expansion in cultivation since the British occupation; and in some parts the area under cultivation is even alleged to have trebled. In olden times the Achakzais lived almost entirely by theft and plunder, and the Kákars of Barshor on the produce of their flocks; while in Shorarúd there were only a few patches of cultivation under the four *kárézes* that then existed. In Pishín and Quetta the people possessed no market for their surplus produce and, in those years in which their crops escaped being plundered, they only grew as much as they required for local consumption.

Extension of cultivation.

All this has now been changed and, with the advent of peace and security, much attention is devoted to agriculture and to the improvement of existing sources of irrigation and the opening of fresh ones. For the latter purpose takávi advances are largely utilised. Government has also provided at great expense the Shébo Canal and the Khushdil Khán irrigation schemes. Much of the water, however, in the Pishín Lora still goes to Afghán territory and, as means are found to utilise it further in Pishín, great benefit will accrue to the District. A ready market is obtainable in the Quetta and other bazars for nearly all produce, while such as is not required in the District can be exported to other places by rail.

The increase in cultivation is chiefly noticeable in the cultivation of wheat, lucerne and vegetables and in the extension of fruit culture including melons. In the Quetta tahsíl the Government share of revenue in wheat was about 4,700 maunds in 1882, allowing for the conversion of the *zar-i-kalang*, which was then taken, into its equivalent in grain; but it had risen to 17,851 maunds in 1894-5, the last year in which revenue was realised by *batái*. Again, the irrigated area under wheat in 1903-4 was 10,734 acres and the dry-crop area 3,083 acres. If the average produce of the former be taken at 15 maunds and of the latter at 5 maunds per acre, the total produce works out to 1,76,425 maunds, and the Government share at one-sixth to 29,404 maunds. Another example can be given from Pishín where in 15, out of the 17 villages in which it was proposed to substitute summary cash assessment for *batái* in 1887, the Government share of revenue wheat was found to be 3,155 maunds in 1879-80, the second year after the occupation of the valley; in 1894-5, the last year in which revenue was taken by *batái*, the Government share of wheat had risen to 10,491 maunds besides 5,055 maunds realised from lands under the Khushdil Khán Reservoir. Such figures speak for themselves. The continual increase in walled enclosures in which fruit is grown is also apparent to any observer who has been for but a short time in the District.

Improvements in cultivation.

In the absence of any organised department the scientific efforts made to improve cultivation have been somewhat spasmodic, but there are indications, that the cultivators are beginning to appreciate improved varieties and to endeavour to raise them for themselves. Colonel Gaisford, when Political Agent in 1889 to 1895 imported some American maize which matured succesfully in his garden at Quetta and the seed was distributed to *zamíndárs*, but the ears raised from the seed were sold fresh and nothing appears to have been left for seed. Colonel Gaisford also introduced the cultivation of oats but it has not yet become popular. Many of the different varieties of melons now grown have been imported from Persia, Turkistán

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and Afghánistán, and mention has been made above of a good variety of black barley obtained from Meshed. The only article, the cultivation of which has died out owing to the competition of better paying crops, is madder (*lodran*). The crop used to be fairly extensively cultivated, the roots being ready for use in three years, but as a dye it has now been entirely supplanted by aniline colours of European manufacture.

Experimental fruit gardens and introduction of improved varieties.

Except the introduction of better varieties of peaches and nectarines by private individuals, little was done before 1902 for the improvement of fruit culture in the District.* In that year the appointment of a Superintendent of Arboriculture and fruit growing in Baluchistán was created with headquarters at Quetta and the incumbent was placed in charge, among others, of the Residency garden and the Woodcock Spinney at Quetta and the garden of the Political Agent's house in Pishín. During the first year, 1902-3, he was able to plant 1,12,832 fruit tree seeds, suckers and cuttings in Woodcock Spinney and distributed to cultivators and others, 1,094 grafted and budded fruit trees, 1,338 fruit trees, seedlings and rooted cuttings and 1,470 roadside and other trees to cultivators and others. Of the seeds, suckers and fruit trees planted, the large proportion of 71,380 died. During 1903-4, 1,285 grafted and budded trees, 4,134 fruit tree seedlings and rooted cuttings and 348 roadside trees were distributed in Quetta-Pishín and other Districts. Besides good varieties of fruit trees, the trees distributed included Kashmír, Kandahár and *kághzi* walnuts.

Fruit and vegetable show.

During the second year of the Quetta Horse show 1890, Lieut.-Colonel G. Gaisford started a fruit and vegetable show to serve as an object lesson to the *Zamíndárs*. The show is divided into two classes: for Europeans and gardeners, and for *Zamíndárs* and the people of the country. In 1904, the exhibits in the first class numbered 1,588, and in the second 171. Prizes to the value of about Rs. 200 are given annually. The part of the show for Europeans and gardeners is very popular and there are many fine exhibits. The people of the District seldom care to send exhibits, as the plots in which vegetables are grown are either let to *baniás* for the season or the produce is sold for a lump sum.

Agricultural implements.

A list of the implements used, with the Vernacular name of each, will be found in appendix V.

The principal implements include the plough, which is known as *yiwi*, the plank harrow or scraper (*kén* or *khál*) with which embankments are made, and the clod crusher, or log used in place of a roller for breaking clods and smoothing the ground, known as *mála*. Among minor implements may be mentioned

* NOTE.—An instructive article on the avenues and fruit gardens of Quetta by Mr. E. P. Stebbing, F.L.S., F.Z.S., F.E.S., which was published in the *Indian Forester* of October, 1905, gives much information regarding the history of tree-planting in Quetta.

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the *rambae* or weeding spud, the *kodál* or mattock; the *dal* or wooden spade worked by two men with a rope for making small embankments, the sickle (*lor*) for reaping, four or two pronged fork (*chár shákha* and *doá shákha*) and the *trapae* or wooden winnowing spade, the rake (*pára*) for collecting the grain and straw scattered on the threshing floor and the *skanna* or chisel for grafting. There has been no appreciable improvement in these implements; rakes, axes, hand-saws and knives of English manufacture are now sometimes used and the use of iron for agricultural work is probably more general than in former days. Lieut.-Colonel Gaisford, while Political Agent from 1889 to 1895, tried to introduce a better kind of plough, drawn by mules or horses, which he imported from the Roorkee workshops, but the people did not take to it.

Agricultural advances.

The Land Improvement Loans Act XIX of 1883, and the Agriculturists' Loans Act XII of 1884 have not been extended to the Agency but the question of their application is under consideration. Rules to regulate such advances have been promulgated under the executive orders from the Government of India, and are embodied in the Baluchistán Takávi Advance Manual, 1902. The annual grant for the whole Agency is Rs. 60,000 of which Rs. 10,000 are earmarked for the Quetta-Pishín District. The Political Agent is authorised, within the limit of his grant, to sanction advances not exceeding Rs. 1,000 in each case, and the Revenue Commissioner up to Rs 3,000; the sanction of the Local Government is necessary for advances in excess of this amount. The ordinary rate of interest is one anna in the rupee or 6¼ per cent. per annum, but in a case in which the Political Agent is satisfied that the project is a sound one financially, and is likely to lead to an increase of revenue, which, within the term fixed for the complete repayment of the advance, will amount to not less than the whole interest which should have been charged under the rules, he is at liberty to grant the advance free of interest. In the case of tribes living on the immediate border, such as the Achakzais, the Political Agent has a wider discretion in the grant of advances free of interest up to the limit of Rs. 1,000, that is to say, the condition about an increase of revenue need not be so strictly insisted on. The advances can be granted either for works carried out by the Political Agent himself or by the agricultural population. In the beginning, the people had strong objections to paying interest, but their prejudices seem to have gradually disappeared and they now readily avail themselves of the loans. During the six years 1897-8 to 1902-3 advances amounting to Rs. 1,00,695 have been granted for the purposes of the Land Improvement Loans Act, and Rs. 19,295 for those of the Agriculturists' Loans Act, the recoveries during the same period being Rs. 73,364 and Rs. 6,145 respectively. Details by tahsíls, for each year

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are given in table VII, Vol. B. The largest amount has in each case been utilised in the Pishín tahsíl. The advances are ordinarily given for sinking new *kárézes*, repairing and improving old ones, for artesian borings, and in the times of drought and scarcity for the relief of distress and the purchase of seed and cattle. A tendency among the recipients to devote the advances to purposes other than those for which they were granted has been checked in recent years. Repayments under the rules should be made by half yearly instalments; so far, they have been obtained without resort to coercive measures.

Agricultural indebtedness.

In the Material Progress Report for 1891-01, Major J. Ramsay, C.I.E., Political Agent, remarked: "There are no signs of general agricultural indebtedness except perhaps in the case of the *zamíndárs* immediately round Quetta. When the railway and cantonments were being built, money circulated very freely, and some of the *zamíndárs* got into an extravagant habit of living which they could neither afford nor give up when things returned to their normal condition." It may be added that in years of drought or abnormal failure of crops, those people who depend largely on dry crops, especially in Chaman, Shorarúd and parts of Pishín, do not possess sufficient means to prevent their incurring debt. As a rule the cultivators do not go to the Hindu *baniá*, but finance each other, and the interest is not mentioned or charged in a direct form. For religious reasons, the orthodox will not pay interest in cash but have no scruple about paying its equivalent in grain. and an arrangement is made either on these lines, or the terms of mortgages are so arranged that the recoveries include enough to cover both principal and interest.

The systems followed are the *ijára*, or contract, and *salam*. Under the former system the land or land and water is mortgaged as security for an advance and the mortgager continues to cultivate it, to provide the labour, seed and bullocks, and to pay the Government demand, but he gives a fixed quantity of grain, ordinarily one *kása* or about 4 seers per rupee, at each harvest to the mortgagee, as interest until the loan is repaid. In some places this is also known as *salam*.

The *salam* system, however, takes different forms. Thus, the Achakzais of Toba sometimes obtain loans in the Chaman bazar, and agree at the time to repay them at a fixed rate at the next harvest, this rate being generally much higher than that current at the time of loan. Thus if a man obtains a loan of Rs. 50 at a time when wheat is selling at 10 seers to a rupee, he will agree to repay the loan in wheat at the rate of 15 to 20 seers to a rupee. This system is also applied to advances of grain. If a man obtains 10 maunds of wheat from a shopkeeper or a cultivator at the time, when the sale price is 16 seers, he will either take the wheat at a lower valuation, say 12 seers for

the rupee, and agree to repay in cash, at the current rate of 16 seers, at the next harvest, or he will agree to repay the loan in grain at a higher rate, say 20 seers to a rupee. AGRICULTURE.

A rather ingenious method of loans prevails in Pishín which has evidently been introduced by men who have been trading in India. In this the principal item is a *thán* or piece of cloth, the price of which is fixed at a rate considerably lower than that prevalent at the time the loan is made. On the expiration of the time fixed, the debtor either has to return the *thán* with the interest, or their value at current rates. If the period of repayment is less than eight months, the price of a *thán* worth Rs. 5 is generally fixed at Rs. 4 but if the period exceeds eight months the price is fixed at Rs. 3-8. Thus, if a man wants a loan of Rs. 50, repayable after nine or ten months, and the current price of a *thán* is Rs. 5, the price of each *thán* is, for the purposes of the loan, fixed at Rs. 3-8 and the borrower holds himself responsible on the expiration of the time to give either $14\frac{2}{7}$ *tháns* instead of ten or to pay the value of $14\frac{2}{7}$ *tháns* at the price current. Such transactions are generally carried on verbally and written deeds are uncommon.

For goods purchased on credit from shopkeepers in Pishín, the interest is 6 to 9 pies per rupee per month, and on cash loans the general rate is 25 per cent. (*sawái*). In parts of Quetta, too, the *salam* system prevails, but some of the cultivators also obtain loans from the Punjab Bank and other firms in the town, the minimum interest being 12 per cent. per annum.

In his preliminary report on the settlement of the Quetta tahsíl Mr. J. A. Crawford, Revenue Commissioner, wrote in 1895, that there were no accurate statistics to show the extent of alienation of land by sale or mortgage, but that the mortgages ascertained by the Settlement department up to date represented nearly three lakhs, of which perhaps a third might be in the hands of Hindu and other money lenders. Such information as he had been able to collect indicated a marked fall during the last seven or eight years in the selling price of agricultural land and an increasing tendency to part with land. In the early part of 1904, Captain Knox made enquiries about the indebtedness of the cultivators of Samungli in the Quetta tahsíl. He examined thirty proprietors and eleven tenants, and found that seventeen of the former and six of the latter were in debt. The highest rate of interest was 60 per cent. per annum, and the lowest 7 per cent. per annum. The most involved class were those tenants who did not till their own lands. Most of the creditors were Saiads and the name of only one Hindu appeared as a mortgagee.

In his report on the Pishín Settlement, Mr. E. G. Colvin remarked that mortgages on land amounted to Rs. 3,26,246-8-8. This sum, he said, allowing for the value of revenue-free grants,

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was about twice the revenue of the whole tahsíl and consisted of incumbrances which had mostly been created since the advent of the British rule. The people, however, largely financed one another and the professional money lender had not yet got any hold on the country.

Domestic animals.

Horses, camels, bullocks, donkeys, sheep and goats are the principal domestic animals. Fowls are also reared which fetch 4 annas to 8 annas apiece according to size. Eggs cost from 2 annas 6 pies to 5 annas a dozen. Nearly every household possesses a shaggy sheep dog for purposes of protection and some of them are very savage. Greyhounds for coursing are kept by the rich.

The following table shows the estimated number of camels, donkeys, cattle, and sheep and goats in each tahsíl in 1905:—

Tahsíl.	Camels, male and female	Donkeys.	Bullocks and cows.	Sheep and goats.
Total	**1,840**	**3,241**	**4,808**	**39,146**
Chaman	1,040	1,030	1,500	20,500
Pishín	500	300	1,700	6,500
Quetta	235	1,836	1,520	11,381
Shorarúd	65	75	88	765

Nomads, principally Ghilzais, generally visit the District during the winter, and the number of animals in their possession (1905) is roughly computed as shown in the margin.

Camels, male / ,, female	5,363
Donkeys ...	1,460
Sheep ... / Goats ...	41,383

Horses.

Information about the different breeds of horses in Baluchistán, their rearing and training and the system of breeding adopted by the Army Remount department will be found in a monograph published in 1905 under the authority of the Revenue Commissioner in Baluchistán.* In pre-British days Baluch and Herát horses were preferred, but breeding from Government stallions is now popular. The principal breeders are the Sháhwáni Bráhuis and a few Kási Afgháns in Quetta, and some of the Taríns, Saiads and Achakzais in Pishín.

The following statement gives statistics of branded mares *etcetera* in the Quetta-Pishín District on March 31, 1904.

* *Horses, Horse Breeding and Horse Management in Baluchistán*, by R. Hughes Buller, I.C.S., with an appendix by Major H. M. Patterson, Army Remount department.

The stallions are only located in the District in the spring and summer. In winter they are removed to Sibi, Kachhi and Sind. Horses.

Name of tahsíl.	Name of stand.	Number of stallions in each stand.	Number of mares branded in each tahsíl.	Number of		
				Colts by Government stallions.	Fillies by Government stallions.	Geldings.
Chaman	Chaman ...	...	3	...	...	...
Pishín ...	Pishín ...	4	105	...	8	11
	Gulistán ...	...	...	1	1	...
	Kila Abdulla ...	...	...	...	1	...
	Khushdil Khán	...	...	2	1	...
Quetta	Quetta ...	14	148	47	46	59
	Kuchlák ...	...	...	3	1	...
	Total ...	**18**	**256**	**53**	**58**	**70**

Before the railways to Quetta and Chaman were opened, the camel was in large demand for the carriage of Commissariat and other Military stores. It is still the most common transport animal but its usefulness is not so great as it was. From rough estimates it appears that the indigenous tribes only possess about two thousand camels, most of which are females. The principal breeders are the Kambrári Bráhuis in the Quetta tahsíl, the Ségi Taríns of Pishín, the Sumálánris and Pír Kánris of Shorarúd, and the Alízai Achakzais of Toba. In summer, large numbers of Bráhui camels visit the Quetta tahsíl and are engaged in miscellaneous transport work, especially in carrying coal from the mines on the Sor Range. At the same time a good many Ghilzais come to Pishín and stay there till the late autumn. The Achakzais have a fair number of camels but they are only semi-indigenous as most of them move into the Régistán in winter and are only to be found in the District in summer. Camels.

In Pishín, Toba, and Shorarúd camels are employed in tilling the land—especially in the dry crop tracts—as well as for transport purposes. In ploughing with camels two men are required, one to lead the animal and the other to follow the plough.

Transport work in the District in peace time is much facilitated by the location in it of two camel corps, the 58th Silladár Camel Corps and the 81st Ghilzai Camel Corps. The 58th Silladár Camel Corps was raised in 1901, and comprises 1,068 camels with 356 *silladárs* distributed in 9 troops Military or Silladár Corps. The 58th Camel Corps.

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under a European Commandant, 4 native officers and 10 non-commissioned officers with clerks, veterinary assistant, *pálán* makers, etc. The summer residence of the corps is Panjpái in the Shorarúd valley, while in winter it moves down to Nushki.

The other corps is the 81st Ghilzai Camel Corps, the enlistment of one sub-division of which consisting of 1 British Officer, 81 native ranks and 143 camels was ordered in 1905. The corps is not being organised on the lines of the 58th Corps, but the camels are the property of Government and are employed in carrying work for Government departments and private individuals.

Donkeys.

The donkey is not only employed by nomads for purposes of transport, and by Afghán labourers for carrying building materials, but in parts of the District, especially in the northern tracts, it is used in the plough. Most of the good donkeys are trans-frontier animals and come from northern Afghánistán, Bukhára and Persia. They carry on an average 3½ maunds; indeed instances have been known of their carrying 4½ maunds, and they are easy to feed. To enable donkeys to breathe freely when going up hill it is usual for their nostrils to be slit soon after birth. The indigenous breed of donkey is poor, but there seems every prospect of the breed being improved as, since 1904, encouragement has been given by Government to donkey breeding on the same lines as to horse breeding, and three donkey stallions were stationed in the District in that year.

Cattle.

The bullocks bred in Bála Nári and Bhág Nári are well known as suitable for agricultural, siege-train and army transport purposes, and they are much sought after in Quetta, Pishín and Shorarúd. Cows are also obtained from the same locality, as the circumstances of the District preclude the extensive keeping of cows for breeding stock. The northern parts of the District in former days depended for their supply of cattle on Kandahár, as they were smaller in size, of thicker build and had harder hoofs than animals from the plains. The export has been recently prohibited, but some of the breed are still to be seen.

Sheep and goats.

The indigenous breed of sheep are of the thick tailed, hornless variety, generally white in colour and of low build. During the drought which ended with 1902, great mortality took place among the sheep and since then the Taraki breed from the Ghilzai country in Afghánistán has been introduced into Pishín and Toba. This breed is somewhat high on the leg, has a thick tail, and is generally white in colour with a black muzzle; it is known as *tor khuli*. Its wool is better than that of the country breed. In Quetta, the sheep are of the Méngal breed.

The breed, however, which is considered best, especially

Sheep and goats.

for meat, and which is purchased, fattened and killed for *lándi* is the Siáh Band breed. Siáh Band lies about 150 miles to the north of Kandahár. The Siáh Band sheep is small but thick set, white, and hornless, with a thick tail and a small head and ears. The meat is delicious, and the wool white and soft. The average annual yield of wool is said to be about 5 seers. The price of these sheep in Siáh Band varies from six Kábuli rupees for a yearling to nine rupees for a full grown sheep, and they sell at Chaman for the same amount in British Indian currency.*

The goats are generally black, with horns and long ears and are owned mostly by the Kákars of Barshor and Toba Kákari, by Achakzais of Toba and by Kákars in Quetta.

A goat produces about 12 ounces of wool each year, a sheep 3 to 5 pounds and a camel from 1 to 5 pounds. Goat hair (*wazhgúni*) is used by nomads for making ropes, sacks, and the *kizhdi* flaps (*tági*); camel wool is employed for making sacks, and sheep wool (*warai*) for making felts (*namda*), felt cloaks (*kosae*) and rugs (*kambala*). The selling price of goat hair varies from Rs. 10 to Rs. 12-8 a maund, and that of camel's wool is about Rs. 8 per maund. The price of sheep's wool depends on the Karáchi market, to which it is exported, and exhibits considerable variations, being sometimes as low as Rs. 13 and sometimes as high as Rs. 22 per maund. The wool is very dirty, the reason being that the sheep, the wool of which is intended for export, are not washed before being shorn, while those of which the wool is required for home use are washed before shearing. No efforts have hitherto been made to improve it. The wool buyers are generally middlemen.

Sheep and goat's milk is consumed fresh or made into curd or butter. Buttermilk (*shalombae*) is a favourite beverage. *Krut* is made from the spare buttermilk, which is first heated and then strained through a cloth, the residue being made into small balls and dried in the sun. This is much valued as a relish. The spare butter is collected and periodically made into *ghí*. The price of *ghí* varies from about $1\frac{1}{4}$ seers to $1\frac{1}{2}$ seers per rupee.

Average value of each kind of animal.

Male camels vary in price from Rs. 50 to Rs. 90, female camels fetch from Rs. 45 to Rs. 70; ponies can be purchased from Rs. 60 to Rs. 100; the price of horses varies considerably, good ones fetching Rs. 300 or more. The price of a pair of bullocks varies from Rs. 70 to Rs. 100, and of a cow from Rs. 25 to Rs. 60. Sheep fetch from Rs. 4 to Rs. 6, lambs about Rs. 2; goats Rs. 3 to Rs. 5; kids about Re. 1-8 and donkeys from Rs. 10 to Rs. 50.

* A Kábuli rupee is equivalent to about $7\frac{1}{2}$ annas British.

AGRICULTURE. Flock-owners' calendar.

As flock-owning is one of the principal occupations of the people, the following calendar, showing the way in which a flock-owner spends his year, is given:—

January and February.

Rain and snow are expected. Flocks must be sheltered in *kizhdis*, huts or caves, and are fed on the dry grass and shrubs collected in the previous spring.

March.

Feeding on dry herbage continues, but grass and shrubs begin to sprout about the close of the month. The lambing season opens at the beginning of the month and the kids are born about the middle of it. Flock-owners from Kachhi begin to return to Quetta.

April.

The lambing season is over by about the middle of the month. Kids and lambs are given half the milk until they can browse, when the quantity is reduced to one fourth. The pasturage is liable to damage from strong west winds at this time of year.

May.

There is plenty of grass all over the District and milk is abundant. The kids and lambs are marked (*darosh* or *darwazh*) by one of the ears, the right being generally pierced. Dysentery sometimes appears. Sheep and goats are shorn, *ghí* making is in progress and continues to July and a stock of grass is laid in for winter use.

June.

Shearing takes place in Toba. The grass begins to dry up and milk diminishes. *Krut* is made. He-goats and rams are sold.

July.

Lambs and kids are weaned, and also castrated, at the beginning of the month. The flocks are now generally taken to the cultivated fields to browse in the wheat and barley stubble. The sheep go dry.

August and September.

Grass is dry but a few of the shrubs are still green. In Toba the rams are turned loose among the flocks. The sheep are everywhere generally shorn, at the beginning of September but shearing in Pishín takes place later. Quetta flock-owners move down to Kachhi about the end of September.

October.

Rams are let loose in the flocks about the middle of the month. Ordinarily two males are allowed to a flock of one hundred sheep or goats. Sheep selected in August for making *lándi* (dry meat) are specially fed. The flocks subsist on dry leaves of trees, shrubs and grass.

November and December.

Sheep fed for *lándi* are killed and the flocks pick up a scanty living on dry leaves and shrubs. The chief article of fodder at this time is dry *tirkhá*.

Pasture grounds and difficulties of feeding cattle.

Writing in 1890 Mr. J. H. Lace, Deputy Conservator of Forests, observed: "The fodder question is one of the most difficult in Baluchistán, since no great quantities of grass exist in the greater part of the country and animals subsist chiefly on the straw of cereals. . . . The best fodder at present available for horses is straw mixed with lucerne, but it is expensive, and grass, *Pennisetum orientale*, is only attainable at Quetta in small quantities from the neighbouring hills. . . . The large herds of

sheep and goats which roam over the hills for six or seven months of the year keep in excellent condition, and this is due to the numerous small cruciferous and leguminous plants which afford them excellent pasturage. *Lepidium draba* and *Convolvulus arvensis* are collected in large quantities at Quetta, from the borders of irrigation channels and from cultivated land, for feeding cattle. Camels find abundant fodder generally in the salsolaceous plants, *Alhagi camelorum*, tamarisk, etc., and are very fond of grazing on most trees and on the berries of the juniper." Pasture grounds, &c.

Green wheat and barley, *khíd* or *khasíl*, and green stalks of maize and *juári* (*karab*) are also used as fodder for horses and cattle. It is too early yet to say whether *Paspalum dilatatum* will be successful as a fodder grass. The cultivators of Sariáb are beginning to appreciate the value of the grasses in the reserved forest at Hazár Ganji for fodder. The principal pasture grounds in Chaman are Loé Toba, Tabína and Sahara, and in Pishín *Khushkába* Ajram, Spín Ghundi between the Surkháb, the Shébo Canal and Haidarzai, Shér Ghundi and Ségi khushkába. Practically all the Shorarúd valley is a vast grazing tract. In years when there is sufficient rain and snowfall in the winter, all kinds of bush and other undergrowth are abundant. The Ségi khushkába is covered with a bush known as *paranrae; zamai*, which makes excellent camel fodder, is plentiful along the Lora in the Ségi circle and in Shorarúd. The principal grasses are known as *kumála, wanaka, usha, sargara wízha, sába, washta tála, kharorak* and *wazhali*, and the bushes used as fodder are the *tirkha, mákhai, zhirga, zoz* and *gázara*. The camel thorn (*zozh*) and *gázara* are cut, chopped, and stored in the autumn for winter use.

With the object of encouraging horse-breeding in the District, Lt.-Colonel Gaisford inaugurated a small show, in October 1889, which has since been continued, and now embraces, besides horses and cattle, garden and agricultural produce. The cost of prizes and other contingent charges is met from local funds supplemented by grants from Imperial and Provincial Revenues. Details of the exhibits will be found in table VIII, Vol. B. The number of animals exhibited other than horses is inconsiderable. Fairs and classes engaged in horse and cattle dealing.

Detailed figures of the horses exhibited, and the number and prices of remounts purchased during the ten years 1895-1904, are given in Mr. Hughes-Buller's monograph on horses to which reference has already been made. The horses brought to the fair are of two principal kinds, northern and Persian horses and locally bred horses. In 1895, 900 northern and Persian horses were brought to the show, and they reached the high number of 996 in 1897, but the numbers have since decreased to 35 in 1900 and 183 in 1904. The decrease has been

AGRICULTURE. due to orders passed by the Amír of Afghánistán prohibiting the export of mares from his territory, an order which was extended later to horses also. The orders, however, were not rigidly enforced till 1899, when the horses belonging to the Huramzai Saiads of Pishín, the principal dealers, and others were confiscated and the dealers nearly ruined. Since then northern and Persian horses have been brought by the Nushki-Seistán trade route, but the business is said to be on its last legs in spite of pecuniary encouragement, which was given to some of the dealers by Government in 1900 in the shape of loans, to enable them to recommence business. The Huramzai Saiads are said to have lost heavily in 1904 owing to a falling off in the demand, and to have given up the business, most of them having since gone to India for trade.

The number of local bred exhibits of horses has increased appreciably from year to year. The total number of exhibits in 1890 was 189, which included northern horses also; in 1895 the number of local bred horses alone was 190; it rose to 488 in the course of the next three years, whilst in 1904 it reached the highest figure, 681. The increases have taken place in almost every class, the progress being especially gratifying in the case of the branded mares, of which 144 were exhibited in 1904, and of branded foals and fillies two or three years old. A large number of small prizes are offered as an inducement to breeders to bring their horses to the Show, and, as a result, while the animals at the head of their class show excellent quality, the remainder exhibit a serious falling off. The extent of this falling off is, however, becoming less noticeable each year.

Dealers. Two or three dealers do a good business throughout the year in Quetta. The Bráhuis, who periodically go to Kachhi, bring bullocks with them on their return and sell them to other agriculturists; some of the Kachhi Jats also bring cattle to the District for sale, but no special class of people is engaged in cattle-dealing. *Zamíndárs*, who require cattle, themselves go to Bhág and Nári during the winter to buy them.

Cattle diseases. No scientific enquiries into prevalent cattle diseases have ever been made. The following notes of these diseases, their characteristics, and local remedies have been compiled for the purposes of the Gazetteer, chiefly with the object of assisting any veterinary expert, who may be deputed at any future time to study them.

According to local notions the worst diseases are always those named by a man when cursing his animal. Thus, if a sheep is refractory, the shepherd will address it: "*Tak dé owaha,*" "May *tak* strike thee." In the same way *buzmarg* is the worst disease of goats, *siráb* of cattle, *surpa* of camels, and *kor bala* of horses. A sheep afflicted with *tak* is said to stagger, fall and die at once. *Post-mortem* examinations

show that the flesh has assumed a dark red colour. No local remedy, except a *mullá's* charm, is known for it. The symptoms of *buzmarg* or *wuzmár* are discharge of fluid from the nose, loss of appetite and eruptions on the lungs. The animal moans painfully. It causes great mortality and is very infectious. "A hundred goats" says the local proverb, "are one meal for the *wuzmár*." A kind of inoculation is practised as a remedy for this disease, by taking a portion of the lung of a diseased goat, mixing it with equal quantities of powdered cloves, pepper, turmeric, aniseed, ginger and *khusáwza*, and inserting the mixture in a slit made in the right ear of each of the remainder of the flock. It is possibly pleuro-pneumonia. *Siráb* or *gao marg*, the symptoms of which are similar to those of *buzmarg*, generally proves fatal within fifteen days. Animals that survive this period, are made to inhale the smoke of *gangu* (*Othonopsis intermedia*). *Surpa* is peculiar to camels, the symptoms being a cough and discharge of fluid from eyes and nose. It is possibly acute bronchitis. The remedies include branding the upper lip; chicken soup, and a mixture made of pepper, *ajwáin* (*Carum copticum*), dried ginger, cloves, and *dár chíni* (cinnamon) mixed in a quarter of a seer of molasses. *Kor bala* is blindness. There is a curious belief that it is caused by the horse walking over an ant hill.

The following are some of the other common diseases with their symptoms and indigenous methods of treatment. Fowl meat forms the most important item in the local veterinary pharmacopœia, and the branding-iron is constantly resorted to. In most of the cases in which branding is used as a remedy, local superstition prescribes that the operation must be performed by one of twins (*aghbargolae*), male or female. In nearly all cases the *mullá's* charm is regarded as a specific.

Animal.	Disease.	Symptoms.	Local treatment.
Sheep.	*Zazhae* or *Kawae* (Inflammation of the skin ?).	Eruptions on the tail, mouth and elbow. Infectious.	All affected animals are segregated.
"	*Shwae larae.*	Swelling of the body.	Juice of green willow leaves used as a drench.
"	*Shin ghuldnzi* (Mammitis).	An ulcer appears on the udder and the latter becomes hard.	Plaster of pounded *harmal* leaves.

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Animal.	Disease.	Symptoms.	Local treatment.
Sheep.	*Kash* (Mange).	Wool falls off and skin becomes cracked.	Sheep washed in soot and water.
,,	*Lawa* (Probably pleuro-pneumonia; possibly tuberculosis ?)	Cough. Lungs affected. Infectious.	The flock is made to inhale juniper smoke.
Sheep and goats.	*Wuchanwáli* (Inflammation of udder ?).	Udder dry, and dimness of the eyes. Appears in April and lasts about two months, and reappears in the spring of the two following years. Infectious.	Plaster made either of sheep dung, or of *harmal*, or of *gangu* leaves applied to udder. In the earlier stages *zarana*, an extract of the sap of the edible pine or of olive branches, is given internally.
Sheep, goats and cattle.	*Kurao, kuráb* or *chálri* (Foot-rot).	Eruption on feet, causing lameness.	1 Animal muzzled and made to stand in mud. 2 Branding the feet. 3 Exercise in a wheat field in which stubble is standing.
Sheep and goats.	*Wur khárae* (Dyspepsia).	Three or four free motions after which constipation ensues.	Animal starved for 24 hours. Molasses dissolved in water, or salt and water given as a purge. Pills made of *gambéla* (Mallotus Philippinensis) and blue vitriol administered and then warm water given.
Sheep and goats.	*Sar chinjae.*	Maggots in the head, frequent sneezing and free discharge of reddish fluid from the nose.	1 Branding the head. 2 Asafœtida dissolved in water and a few drops poured in the nostrils.
,, ,,	*Zharzami* (Probably Foot and mouth disease).	Gums swell and animal cannot eat. Infectious.	

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Animal.	Disease.	Symptoms.	Local treatment.
Sheep, goats and cattle.	*Makrae*, *Waghasae*, or *Spansae*. (Parasite in the intestine ?).	Caused by drinking bad water, especially in July and Augt. Parasites germinate in the stomach of the animal.	Animal kept without water for 24 hours, *sharbat* of molasses given, and then *gambéla* pills.
Lambs and kids.	*Mánde*. (Rheumatism).	Swelling of joints.	Threads tied round the affected joints.
Sheep.	*Pér wane*.	Discharge of fluid from nose accompanied by moaning sound. Generally appears in June.	
Cattle.	*Tamba* (Gorged rumen or hoven).	Stomach swells through overfeeding on young lucerne.	1 Quarter of a seer of bitter oil given as a drench. 2 Incision made in the side of the animal's stomach to allow a passage for wind. 3 A willow stick is placed in the mouth of the animal to cause vomiting.
Cattle, sheep and goats.	*Garg*. (Malignant sore throat?).	Sore throat, stiffening of tail and affection of lungs.	*Gambéla* is administered as for *wurkhárae*.
Camels.	*Narae ranz*. (Sarra ?)	Loss of appetite and general debility. Animal always stands or kneels facing the sun.	1 Soup made of porcupine or goat. 2 Chicken soup made from a chicken stuffed with pepper, *saunf*, cloves, *ajwáin* and *sonth*.
,,	*Mach* (Sting of gad fly).	This fly, which is common in Arambi and Tang Masézai in Pishín, stings the animal in Sept. and Oct. and causes the body to swell.	Chicken soup.
,,	*Murghak*. (Tetanus in fatal cases).	Neck is distorted and animal writhes.	Branding of the whole body by an expert, beginning from the left nostril round the body and ending at the right nostril.

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Among the diseases from which horses, donkeys, etc., commonly suffer may be mentioned *shikandan* (colic?); *nasa* or *saghao* (catarrh?); *maghao* (laryngitis?); *babo* (paralysis?); *abgír* (acute laminitis?); *jaogír*, an affection of the joints caused by watering immediately after the grain-feed has been taken; *khárash* (scabies?); *pushtak* (ringbone?); *matra* (spavin?); *hadae* (splint); *ab siáh* or *aḇ-i-siáh* (thrush?) and *savaja*, an eruption on the legs.

Irrigation. General conditions.

The necessity of irrigation to ensure a crop, owing to the insignificant quantity and precariousness of the rainfall, has already been explained. Cultivation can, therefore, only be practised with certainty when the scanty fall is stored by natural or artificial means. Hence the importance of the Government canals, of the *kárézes* and of artesian wells. The other sources of supply are springs and streams, the perennial flow of which is diverted into artificial channels and devoted to irrigation. There are (1904) 2 Government irrigation works, 278 *kárézes*, 26 artesian wells, of which, however, only 4 are used entirely for cultivation; 908 springs; and 21 streams. Lands in which the *khushbar* or spring crops are to be raised require to be irrigated in the autumn, when they are ploughed, smoothed and prepared; and again in April and May to bring the crops to maturity. The *sauzbar* or *sabzbar* or autumn crop lands need irrigation from April to June for sowings and constantly thereafter till the crops ripen. *Juári*, *azhdan* and *ghosht* need comparatively little water, but melons, lucerne, potatoes, tobacco, carrots and vegetables have to be continuously watered.

Government Irrigation Works. Shébo Canal.

The Government irrigation works in the District are the Shébo Canal and Khushdil Khán Reservoir, both of which are situated in the Pishín tahsíl and both of which are classed as minor works. The Shébo Canal is an ordinary canal system, supplemented with four storage tanks in which water can be stored when not wanted on the lands, generally in December, January and February. The source of supply is the Kákar Lora, from which the canal takes off at a point about 2 miles from Yaru Káréz, and about 50 yards to the north of the junction of the Kákar Lora with the Tirkha, or Tor Wazhi, Mánda. The supply in the Lora, all of which is turned into the canal, depends greatly on the season but, with the exception of flood water, which is too heavily laden with silt to be suitable for storing, it is never more than the canal is capable of carrying. The scheme was projected by Mr. R. G. Kennedy in 1885-6 and completed in 1888, the total capital cost to March, 1903, being Rs. 6,77,231. There are 23½ miles of channel on the canal and the area commanded is 16,020 acres, the yearly cultivable area being 5,340 acres. The canal irrigates the land of the Khudádádzai, Batézai, Shádízai and Sulemánzai

villages. The maintenance of the canal and the distribution of water is in the hands of the Irrigation department. During the first year, 1889-90, the revenue was collected by *batái* at the rate of one-fourth of the produce from the Khudádádzai and Batézai lands, and at one-eighth from the Shádízai lands. The Shádízais were assessed at a lower rate because they had had an old channel to take off water from the Lora which was absorbed in the new canal, but the rate was raised to one-sixth in 1890-1891. The rate on the Khudádádzai, Batézai and Sulemánzai villages was raised to one-third of the gross produce in 1893-94, and on the Shádízais in 1894-95, after the latter had received compensation, amounting to Rs. 12,000, for their old water channel. The revenue is now collected in kind at this rate by the tahsíl officials. The grain and fodder is sold by auction, and after payment of the charges of collection, i.e., the cost of caretakers and headmen's fees, the net amount is credited to the Irrigation department. Four water mills on the canal, which are farmed out annually, bring in an average income of about Rs. 1,110 annually. AGRICULTURE.

The details of area cultivated during each of the twelve years 1892-93 to 1903-04 and the revenue realised are shewn in table IX, Vol. B. The average area annually irrigated, during the decade 1892-93 to 1901-02, was 2,562 acres of which 2,418 acres were under the spring crop and 144 acres under the autumn crop. In 1902-03, the total irrigated area was 2,939: spring crop 2,651, and autumn crop 288. The percentage of net revenue on capital outlay in the decennial period was ·85, the highest being 1·99 in 1897-98. In 1902-03 the percentage was ·09.

Khushdil Khán Reservoir.

The Khushdil Khán Reservoir scheme was also projected by Mr. Kennedy in 1886-87 and was completed in 1891. The tank is about 3 miles long by $1\frac{1}{4}$ miles wide with a central depth of 30 feet and capable of holding 739,400,000 cubic feet of water. It is filled from feeder-cuts carrying the flood water of the Barshor and Tor Murgha rivers. At first only a single feeder-cut from the Barshor was made, but it was found insufficient to supply the tank, and the Tor Murgha cut was excavated in 1902. The total capital cost amounted to Rs. 9,94,116 to the end of March, 1903. This amount includes a sum exceeding Rs. 23,000, which was paid to the *zamíndárs* as compensation for land, loss of water and crops. The supply of water is entirely dependent on the rainfall and snowfall of the year. There is a system of distributing channels of a total length of $22\frac{3}{4}$ miles, excluding the water channels to the cultivators' fields. The area commanded is 36,300 acres, the area available for cultivation each year being about 12,000 acres but up to 1902-03 only about one-fourth of this figure was ordinarily reached. The largest area under cultivation was in 1901-02 when 5,504 acres were cultivated.

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The reservoir supplies water for the irrigation of lands of Yásínzai, Malézai, Khudádádzai, Karbala, Haikalzai and Bora Sháh Muhammad Hasan. The system of maintenance and revenue is the same as that on the Shébo Canal. As in the case of the latter system, the revenue was first levied at one-fourth of the produce, but the rate was raised to one-third in 1893. The table already referred to contains details of the area irrigated and the revenue realised. In the decennial period 1892-93 to 1901-02 the average area irrigated annually was 3,300 acres of which 3,283 acres were under the spring and 17 acres under the autumn crop. The cultivation of autumn crops is discouraged as they do not pay well and require much water, which can be more usefully employed for autumn sowings, and much evaporation takes place. The percentage of net receipts on capital outlay during the same period was 1·86. As indicating the dependence of the reservoir on the character of the seasons it may be mentioned that in the year 1902-03, which was an abnormally dry one, there was no water in the reservoir and no cultivation. During 1904-05 rain was abundant, and the new feeder-cut added considerably to the supply of water, the reservoir gauge stood at 20 feet at the beginning of the *rabi* season, and an area of 5,088 acres of *rabi* was sown to which 1,346 acres were added later, making a total of 6,434 acres. The net revenue amounted to Rs. 41,749 giving 4·08 per cent. on the capital outlay, the highest previous figures being 2·15 in 1898-99.

Sources of irrigation. Káréz irrigation.

The importance of irrigation from *kárézes* may be gauged from the fact that, during 1902-03, of the total area under irrigation in the Quetta and Pishín tahsíls, viz.: 1,41,762 acres, 93,909 acres or 66·2 per cent. were irrigated by *kárézes*. Confusion is sometimes caused by the application of the term *káréz* not only to the ordinary sub-soil drain, the earth heaps at the tops of the wells of which present so marked a feature in a Baluchistán landscape, but to artificial underground channels or adits constructed to carry water from rivers and streams. In the strictest sense the word *káréz* applies to the sub-soil drain only.

The *káréz* is a very ancient method of artificial irrigation indigenous to the country. In the Quetta tahsíl there are some ancient *kárézes*, now out of repair, which are known as *gabri*, having been constructed, so local tradition asserts, by Gabrs or Zoroastrians. If a new *káréz*, whilst under construction, happens to strike the old channel of a Gabri *káréz*, local authorities believe that a bountiful supply of water cannot fail to be the result. An instance in point is the Mián Khán or Kéchi Bég *káréz* in the Sariáb circle of the Quetta tahsíl.

As a source of irrigation the *káréz* is so important that the following account of it by Mr. R. D. Oldham of the Geological

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Survey of India, may be quoted *in extenso.** "As the theory of the *káréz* is a matter on which much misconception is prevalent, it will be well to treat of it briefly. The ordinary explanation is that an "underground spring" having been discovered, a series of shafts connected by tunnels is made, by which the water is brought out to the surface. This idea of an underground spring is extremely prevalent and owes its origin to the description of the natives, who have frequently told me that the water entered their *kárézes* from springs. I have scrambled through the underground passages of some of these *kárézes* to investigate the matter and have found, as might be expected, that the description is a natural but misleading one. In a few cases the *káréz* does appear to derive its supply from what may, without great impropriety, be called an underground spring. Such are the *kárézes* between Kuchlák and Baléli which are driven through impervious Siwálik clays up to the foot of a limestone ridge; it is not from the Siwálik clays that they could derive any supply of water, so it is probable that there are here springs issuing from the solid rock. A still more striking instance is a short *káréz* at Kiráni driven, not into either of the fans which lie to the north and south of the village, but towards the hill where there is no stream valley of any size; yet this is not only the shortest but one of the most abundant *kárézes* I have seen; here, too, it seems probable that the water is supplied by a spring issuing from a solid rock. Such cases are, however, very exceptional, and, as a rule, the explanation, both of the real facts and of the origin of the misconception regarding the action of the *kárézes* is very different.

"As the *kárézes* are never lined in any way,† it is impossible to drive them through incoherent material charged with water; it would moreover be unnecessary to do so, as, if an incoherent bed of sand or gravel charged with water were once struck, the supply would amply satisfy the desires of the *káréz*-diggers. The *kárézes* then, after they enter ground charged with water, can only be driven through stuff which is rendered coherent by a greater or less admixture of cementing material. But this cementing material not only renders the ground firm enough to form the sides and roof of the tunnel, but lessens the permeability of the ground and, what we are more concerned with, makes it irregularly permeable. When the *káréz* is driven through such a deposit, the water will first of all drain away at those spots, where it is most permeable, very probably washing out the fine-grained matrix and forming a small channel penetrating to a greater or less distance from the sides of the tunnel. Into this channel water will percolate and, instead of

* *Records of the Geological Survey of India* Vol. XXV, part I, 1892.

† This statement is incorrect.—ED.

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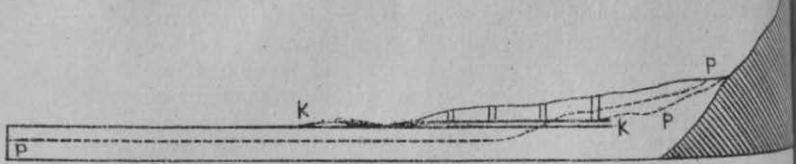


Figure 1.

"Having stated what is not, it is now necessary to describe what is, the correct explanation of a *káréz*. In fig. 1, a diagrammatic section of one of the gravel slopes is represented, the dotted line P.P. represents the limit of permanent saturation, that is the limit below which the gravels are always charged with water even in the driest season. Such a limit exists everywhere, but the form of its contour depends on a variety of conditions, such as the rainfall, discharge of streams at the head of the fan, permeability of the gravels, etc., which need not here be considered in detail. Now, if the *káréz* K.K., is driven into this slope, that portion of it which lies below the line P.P., will drain the sub-soil of its water and discharge this at the outlet.

"It will be seen from this that in its nature and mode of action the *káréz* is only a sub-soil drain, in both cases the object is to bring water, which lies underground, to the surface, the only difference being that in the one case it is desired to obtain the use, and in the other to get rid, of the water.

"From the nature of the case these *kárézes* are affected by the rainfall in a marked manner,—a single dry season, and, still more, a succession of years of deficient rainfall, causes a diminution in the discharge of the *káréz*. Last year (1890) the falling off of water supply was very wide-spread and, so far as the diminished discharge was only due to the dryness of the season, was not altogether an unmixed evil, for it led to an energetic cleaning out and in some cases lengthening of the *káréz* which will improve its ultimate capacity. In a new *káréz*, however, the failure may be due to another cause, which is more serious, as it permanently affects the supply of water, and may make this fall so low as to lead to the abandonment of the *káréz*.

"When the *káréz* K. K. in fig. 1, is first made, water will flow freely into it from the surrounding gravels in all that

portion which lies within the original limit of permanent saturation. But, after it is completed, a new outlet is provided for the sub-soil water, the limit of permanent saturation will adapt itself to the new conditions and ultimately settle down with a profile which may be represented by the line P. P. P. The subsequent history of the *káréz* will now depend on the relative importance of the causes which led to the sub-soil water originally maintaining its level along P. P. P. If the gravels were tolerably permeable and a considerable supply of water was constantly percolating through them, the *káréz* will settle down to a fair or abundant discharge. If, on the other hand, the amount of water percolating was very small and the level of permanent saturation kept up by the impermeability of the gravels, the ultimate condition of the *káréz* will be one of very small discharge.

"I do not know to what extent this cause of failing supply of water has acted, or is acting, but there can be no doubt that, except in the case of old-established *kárézes*, it must, to a greater or less extent, be at work. I made many attempts to collect information which would bear on this point, but was baffled by ignorance, reluctance to impart the information, or an inability, real or pretended, to understand the points regarding which information was desired. I was unable even to arrive at a trustworthy conclusion as to whether the reputed dimi nution of supply was as common, or as extensive as was complained of, and this, when we consider how many reasons the proprietors have for complaining of a failure of water supply and the absence of any inducement to acknowledge an increased discharge, is not to be wondered at.

"As might be expected in a country where water is so valuable and apparently so mysteriously capricious in its occurrence, a class of men has arisen which pretends to a special knowledge of the underground distribution of water and to them the planning of new *kárézes* appears to be principally entrusted. I have not met any of these men, but so far as I can gather they seem in some cases to possess a certain amount of knowledge partly inherited, partly the result of observation, of the subject they profess. This is doubtless mixed up with a good deal of superstition, but as their directions are received with the same implicit belief as their rulers grant to the dictum of any self-styled "expert," the shaft, sunk on the spot indicated, is carried down till it reaches water, whereby the reality of his knowledge is proved. Meanwhile he takes care to conceal the knowledge, if he possesses it, that there was no special virtue in the spot selected, and that there are many other places where a shaft would be equally certain to strike water, if given the same chance. Should water not be found, his employer is probably informed—for there is a close resemblance between the various

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species of the genus expert—that he did not go deep enough, or that though water was not found just there "the indications are very favourable," he is recommended to try some other place near by, and, if his patience or capital be exhausted before water is obtained, the expert, following the example of his kind, takes himself off to another country where his ignorance has not been exposed, there to find that ready credence which mankind is prone to yield to a plausible assertion of knowledge and, with better luck, repair his damaged reputation.

"The amount of labour spent on some of these *kárézes* and the depth of their numerous shafts, is astounding; they are frequently miles in length and the shafts near their heads are said to be in some cases 150 feet deep.* This is doubtless an extreme case, but, when examining the Quetta plain, I found that in many cases the shafts at the head of those which drain from the hills, east of the valley, could not be plumbed with the 70 feet line I carried with me. These must have taken many years and cost large sums to excavate, but it is probable that the whole was not made at once, and that they were gradually lengthened at their upper ends where they are deepest out of the profits derived from the water which the original shorter channel yielded."

The local experts in *káréz* digging are the trans-border Ghilzai Afgháns who come to the District in winter. They prefer this season owing to the severity of the climate in their own country and the convenience of working underground in winter. They generally work in parties of four, each of which is technically known as a *charkh*. The name is derived from the "windlass" which forms the most important part of their equipment. The work is done either by contract for a lump sum, or on payment by actual measurement, and, while they are employed, the workmen are generally provided with food, tools, loin cloths and lights by their employer. The tool chiefly used is a short pickaxe (*kulang*), which can be used by a man in a kneeling or crouching attitude. Details of the prevailing rates for *káréz* work will be found in the section on Wages.

The soil is removed from the *kárézes* by means of a leathern bag attached to the windlass by a rope. The bags are of raw buffalo or cow hide, and four bags can be made from a single skin which costs about Rs. 8. They last about ten to fifteen days. Bags made of chrome cured buffalo hides from Madras, which can be delivered in Quetta for about Rs. 9, were found, by experiments made in 1905, to be much more durable than rawhide bags and, when employed on *káréz* work, were still in good condition after 82 days' use.

* One of the shafts of the Ináyat Ulláh *Káréz* near Gulistán is said to be 270 feet deep.—ED.

The excavation of a *káréz* is an expensive undertaking, and it is therefore, generally constructed by joint capital and owned by several co-sharers. If a capitalist gets a *káréz* made to irrigate land belonging to another person, the water and land are, as a rule, divided equally between the capitalist (*khat kash*) and the landlord.

In selecting a site for a *káréz* the excavators are guided solely by experience and have no scientific knowledge. Professional water-finders are known in the Ghilzai country, but do not visit this District. Generally a site is chosen along the banks of a hill torrent, or in one of the inosculating fans situated where a hill torrent debouches from the mountains into the valley. Note is also taken of the appearance of moisture after rain, and of the presence of moisture-loving shrubs and grasses. The next step is to dig a trial well (*gumána*) and if this proves successful, other wells are dug and connected by tunnels (*lambúr*) until the water reaches the surface. If the ground is soft, the wells and channels are lined with stones (*sangchín*). Any proposal to sink a new *káréz* near to an existing one is regarded with great jealousy. The minimum distance to be left in such cases varies, but it is generally from 200 to 500 yards.

The expense of digging a *káréz* is usually from two to fifteen thousand rupees, but in special cases the expenditure is known to have been even higher. The Government has encouraged the construction of such works by granting takávi advances, and by exempting such new sources of irrigation from payment of revenue for a term of years. Between 1890 and 1905 takávi advances, exceeding Rs. 1,000 each, were given for new *kárézes* in 17 cases. Among those for which large sums have been advanced may be mentioned the Mián Khán or Kéchi Bég *Káréz*, Rs. 17,000 (1891-93); Sultán Muhammad's new *káréz* in Kuchlák, Rs. 5,500 (1896-97); Iskán Khán's *Káréz* in Barshor, Rs. 11,000 (1897-99); and the *káréz* sunk by Ghulám Ján and others in Sariáb, Rs. 7,000 (1898). Among old *kárézes* of importance are the Tázi *Káréz* near Quetta, which is now partly owned by Government and which can irrigate about 580 acres in a year; the Gulistán *Káréz* (500 acres) and the neighbouring Ináyat Ulláh *Káréz* (400 acres) in Pishín; and the Kalán Sirki *Káréz* (255 acres) and Muhammad Azam *Káréz* (234 acres) in Quetta.

No scientific enquiries with the object of ascertaining the utility of machinery for *káréz* excavation have yet been made. A subject, which will probably require attention at no distant date, is the diminution of the area commanded by *kárézes*, owing to the lowering of the water level by constant cleaning. As an instance it may be noted that a considerable area once commanded by the Kéchi Bég *Káréz* has recently gone out of cultivation in this way.

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Maintenance of kárézes.

The *míráb*, where such a village official exists, and in other places the headman, makes the necessary arrangements for the repair of a *káréz*. If the work to be done is heavy, a *káréz kash* is called in and asked to give a rough estimate of the cost. The money is then collected from the co-partners, in proportion to the share held by each in the water, and the work carried out under the supervision of the *míráb* or headman. On the completion of the work, it is examined, the account is made up and any excess or deficit is adjusted. For work, which requires no special skill, the labour is provided by the co-partners. Repairs to *kárézes* are very expensive and large takávi advances are made for the purpose.

Streams.

In the Quetta and Pishín tahsíls there are 15 streams, the water of which is used for irrigation, and the area irrigated by them in 1902-03 was 9,537 acres or 6·7 per cent. of the total area irrigated from all sources.

The principal streams in Pishín are the Barshor, which irrigates the Tora Sháh, Kamálzai, Shighálzai, and Malik Yár lands, and the Surkháb, which irrigates the Karbala, Haikalzai, Khudádádzai and Malézai lands. Owing to the high banks, the water of the Pishín Lora has, so far, not been used for irrigation above Rahím Kili, close to which place, Saiad Sháh Alam has thrown an embankment across the bed of the river, and is making a channel to carry the water for irrigating the Abdur Rahmánzai lands. The work is still (1905) in progress. The largest scheme ever undertaken by a private individual in the District is that of Malik Pakúr Khán of Khudádádzai, who is attempting to conduct the water of the Pishín Lora by an underground water channel from a point about a mile below Lower or Páin Yásínzai to the Khudádádzai lands, about 7 miles below. To assist him he has been given takávi advances aggregating Rs. 42,433 between 1897 and 1905, the largest amount ever given to a zamíndár in the Province. The work is still (1905) in progress. Between Rahím Kili and Burj five channels have been taken off from the Lora. In the Quetta tahsíl the Hanna stream irrigates the lands and orchards in the valley of the same name, and also in the Kila Durráni circle of the tahsíl. A share of the water has been purchased by Government for the Quetta cantonment. Six channels (*viála*) have been taken off from the Sariáb Lora, which annually irrigate about 2,480 acres of land. The largest of these channels is the one owned jointly by the Khézi, Samungli, and Nau Hisár villages, which irrigates about 1,682 acres annually. One of these channels was constructed in 1887 on the *khat kashi* system by one Gurdit Singh of Pesháwar at a considerable cost for irrigating the lands now known as Tirkha Gurdit Singh, and he acquired half of the land. In Toba Achakzai, the Táshrobát, with its numerous affluents, provides most of the irrigation water,

but a small amount of irrigation is also done by the Wuch Kadanai. AGRICULTURE.

The water of the streams is generally raised by means of earthen and brushwood dams thrown across the bed from which the water is led in open channels. The dams are of a temporary character and have to be reconstructed after heavy floods. Both dams and channels are constructed by the *zamíndárs*, who also maintain them, the labour being provided in proportion to the shares held in the water.

Artesian wells.

The sinking of shallow artesian wells round Quetta has been attended with satisfactory results and local cultivators are beginning to appreciate their value. Four are entirely used for purposes of cultivation; the water of the rest is employed in the irrigation of gardens and for supplying the railway works, etc. The mode of occurrence and probable distribution of artesian water in Quetta and Pishín had been discussed in a valuable report by Mr. R. D. Oldham, which is embodied in Volume XXV, Part I of the *Records of Geological Survey of India.* In 1902, Mr. Vredenburg of the same department made a further report* on prospects of obtaining artesian water at some points situated at Quetta and in the neighbourhood, and remarked that the experience gained since the publication of Mr. Oldham's report, all tended to confirm that officer's conclusions.

The first well was sunk in Quetta in 1889 and up to 1904 successful wells had been sunk in the following localities:—

	Government.	Private.
Quetta Town	16	3
Quetta Tahsíl	2	4
Pishín Tahsíl	1	0
Total ...	**19**	**7 = 26**

The highest discharge is that of the Railway well near the Engine Shed, which was 27·85 cubic feet per minute in November 1904.

The wells vary considerably in depth the deepest for which records are available being that near Paradise Square in Quetta,

* Memoirs of the Geological Survey of India Volume XXXII, Part I.

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which is 376 feet, and the shallowest that in the garden of the Railway rest house, 130 feet. Other depths are :—

			Feet.
Quetta,	well	near Railway Engine Shed ...	140
,,	,,	on Lytton road	147¼
,,	,,	on Barnes Káréz	164
,,	,,	Cattle market	242
,,	,,	Railway block, No. 33	195¾
,,	,,	near Mission Zanána Hospital...	255
Bostán	...	... ...	210
Baléli	...	... ...	333

In Quetta town no wells can be made without the permission of the Agent to the Governor-General and without skilled supervision, the rules being that, no well is to be sunk within 500 yards of another well; that no uncased wells are to be allowed; that all wells must be made water-tight between the sides of the wells and the case; and that the water-tight point should in no case be more than 15 feet above the level from which the water comes up.

Success has not attended boring operations in all cases and unsuccessful borings have been made by the North Western Railway at Bostán, Chaman, and Gulistán. The cost of the well at the latter place was Rs. 5,395-5. Experiments made by the Civil Department at Pishín, and in the Tabína plateau have also proved a failure.

In February, 1903, the Secretary in the Public Works Department reported to the Irrigation Commission that it appeared that experimental borings for artesian water offered the only hope of showing a source of supply of water for irrigation purposes which was not at present being utilised or developed. It was suggested that an officer of the Geological Survey might be deputed to make an extended tour in Baluchistán and advise the civil officers as to the best sites for trial wells; when the sites were known, funds might be provided for trial borings at each site. During 1904-05, the Government of India made a special grant of Rs. 50,000 for experimental borings for artesian water in Baluchistán, but all the money has not yet been utilised (1905) as no officer of the Geological Survey has become available to inspect the sites. A steam boring plant has been ordered. The Political Agent suggested the following sites in Quetta-Pishín for experimental borings :—

1. On the bank of the Habíb above Railway bridge in Quetta.
2. On the Brewery road, west side of Lora.
3. Near Girdi Taláo.

4. About 4 miles north of Girdi Taláo.
5. Kuram Máṇda about 4 miles west from the Kuram post.
6. About 5 miles east from Kila Abdulla.
7. Sariáb.
8. A place beyond Pishín bazar.
9. A place on the Pishín road about 3 miles from Yáru Káréz.

With careful selection of sites, there seems to be a good future in store for cultivation from artesian wells.

Division of water.

Permanent sources of water are divided into a number of shares, the usual unit of division being the *shabánaroz* or the flow of a day and night. The minor divisions of a *shabánaroz* differ in various parts of the District but those in commonest use are indicated in the following table :—

I. Chaman. The lowest unit is a *cháryak.*

2 cháryak = 1 wakht.
2 wakht = 1 shabánaroz.

II. (*a*) Pishín. In the Tarín and Parézún villages the lowest unit is a *mázígar.*

2 mázígar = 1 mápshín.
4 mápshín = 1 wakht or wial.
2 wakht or wial = 1 shabánaroz.

(*b*) In the Lora and Kárézát-i-Kákari circles of Pishín the lowest unit is a *gutta.*

2 gutta = 1 shingari.
4 shingari = 1 sáya.
2 sáya = 1 nimkai.
2 nimkai = 1 wakht or wial.
2 wial or wakht = 1 shabánaroz.

III. Quetta. Here the *sáya* is the lowest unit.

2 sáya = 1 pás.
2 pás = 1 wakht.
2 wakht = 1 shabánaroz.

IV. Shorarúd. The lowest unit is the *kor.*

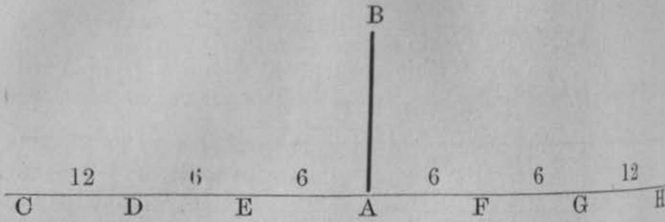
10½ kor = 1 pálas.
2 pálas = 1 ním shavároz.
2 ním shavároz = 1 shavároz.

The actual distribution is conducted by the *míráb* or other person charged with the work who is guided by an ingenious dial during the day and during the night by the position of the moon and certain stars.

Thus for the purpose of dividing the water of the Ulsi Káréz in the Sarwésht circle of Pishín the day is divided into 8 *mázígar* and the night into 4 *mázígar.* For distribution during the day a dial is made of a straight stick, twelve fingers high, which is planted in level ground at sun rise. Subse-

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quent operations are graphically explained by the following diagram :—



A B represents the stick and C H the ground line. The first *mázígar* after sunrise is considered to be over when the shadow of the stick has receded to the point C which is 24 fingers' breadth distant from the point A. The second *mázígar* is over when the shadow has moved 12 fingers further and is at D, while each of the two subsequent *mázígars*, up to midday, are represented by a movement for the breadth of six fingers each. In the afternoon the reverse process is followed, the last *mázígar* lasting from the time the shadow has reached the point H till sunset.

The distribution of water by night is a much more difficult business and is conducted largely by guess work. The *míráb* is, however, assisted by the fact, which he has learnt by experience, that the point on the heavens at which the moon appears on the fourth day of the lunar month indicates the distance to be traversed in the period of a *mázígar*. Similarly the point on the heavens at which the moon appears on the seventh day of the lunar month indicates a period of two *mázígars*. By using stars instead of the moon on other nights, the *míráb* is able to make a sufficiently accurate calculation. The third *mázígar* is determined by the crow of the cock or by the position of some star judged by the system described above. The fourth *mázígar* lasts till sunrise.

These are the principles in accordance with which the *míráb* calculates the various shares. Their practical application differs according to the quantity of water in the *káréz*. Thus, in a *káréz* with a large supply of water, the shares belonging to different sections are sometimes taken off in separate channels; in which case each is treated for practical purposes as a separate *káréz*. If this is not the case, the use of the whole of the water is first distributed by lot among the different sections (*ulus*) who are holders in the *káréz*. When this has been done and the turn of each in the whole quantity of water has been settled, the co-sharers in each section again determine their turns in the water by lot. Thus, the water of the Ulsi *káréz* in

the Sarwésht circle of Pishín is divided into 38 *shabánaroz*, the minor divisions of a *shabánaroz* being :— AGRICULTURE.

3 mázígar = 1 nimkai
2 nimkai = 1 wakht
2 wakht = 1 shabánaroz.

The water is divided among the following sections (*ulus*) :—

	Shabánaroz.	Mázígar.
Shighálzais	2	2
Kamálzais	10	7
Tora Sháh	9	3
Malikyár	16	0

When the sowing time of each crop arrives the first thing to be done is to fix the turns of each of the *ulus* by casting lots (*pucha*), and these turns continue until the spring crop is harvested, when a fresh division is made for the autumn crop. In some cases the arrangement continues throughout the year. Similarly the individual proprietors within the sections each determines his turn by lot. This periodical distribution is called *umma*.

The system is not, however, universal, and in some *kárézes* a permanent distribution (*pokh*) has taken place, each proprietor's turn in water being fixed. Of course it is not necessary that a man who possesses, say, one twenty-fourth of a *shabána*, should receive one hour's water daily. It may be more convenient for him to receive his share once every ten days, in which case this distribution is effected by mutual arrangement among the various owners.

Water mills.

Wherever sufficient water power exists it is employed for turning water mills, which number about 262. The stones used in Pishín are extracted from Shérghundi, Zhézhgai, Yúsaf Kach Ghar, and Zhézha; in Chaman they are obtained from Takht in Afghán territory; in Quetta they were formerly obtained from near Karakhsa on Chiltan and from the Bolán Pass, but they are now imported from Amritsar, Gujránwála and Wazírábád in the Punjab. The cost of a pair of Punjab stones landed in Quetta is about Rs. 45.

Water mills are generally constructed below an artificial embankment (*wand*), along which the channel for water (*béla*)

IRRIGATION.

is led. The flow of water is adjusted by a regulator (*pár chao*) at the upper end of the *béla*, and it reaches the mill through a water shoot (*tarnáwa*). The foundation for the mill is laid out with gravel, covered with loose boulders. Over the boulders is placed a wooden plank about 3 feet long, 1 foot broad and 4 inches thick, called *takht*, the length projecting beyond the mill-wheel. A round stone, called *gauhar sang* or an iron socket, called *gola*, is placed in a cavity in the plank to which is fixed an iron bar, called *murghak;* this bar is about 5 inches long. It forms the base for the axle-box (*charkh*), into which flanges (*parah*) are mortised horizontally but at a slight angle to the axle-box. A spindle (*miánzai*), consisting of an iron rod about an inch square is inserted in the upper part of the axle-box, passes through the bed stone (*lándipal*) and is fixed to an iron cross-piece (*mauli*) let into the upper stone or runner (*sarbérapal*). The milling is done by the rotation of the runner revolving on the spindle. The lower or bed stone is permanently fixed in a wooden platform (*takhtaband*), situated above the horizontal mill wheel. The stones, both of which are grooved, are surrounded by a low mud wall (*daura*) for catching the flour which is removed at intervals with a long-handled wooden spade, called *phárú* or *shágird*, to a hole at the side (*árat khána*), which is made to receive it. The quality of the flour is regulated by a vertical beam (*ghwazhae*), which passes downwards through the platform and is attached to the *takht*, and which can be raised or lowered by means of a lever. By so doing the space between the mill stones is increased or decreased, thereby rendering the flour coarse or fine. In the upper stone or runner is a hole (*survae*), to which the grain is led by a tray from a wooden funnel or bin, known as *dol.** This is fixed to the wall of the building containing the mill by a framework (*chár chob*) the latter being supported in front by forked uprights (*túnri* or *doshákh*) standing on the platform. The grain is caused to flow into the hole in the runner by an ingenious arrangement, consisting of a wooden tray (*karéchi*)† the back of which is attached with string to the bottom of the bin and the front to the frame holding the latter its mouth being placed above that of the runner. This tray is caused to vibrate by a pole (*taktaka*), which is connected with and rests on the runner, when in motion, thus shaking the grain forward, whilst the flow of the grain from the tray is regulated by opening or closing the aperture between the tray and the bin. This is done by twisting or untwisting the string attachment (*dol andáz*) by which the front of the tray is tied to the frame. The whole apparatus of the mill is enclosed in a mud hovel (*khúna*), except in the case of Government

* Called *jalatta* in Chaman.

† Called *sár kasa* in Chaman.

mills on the Shébo Canal and some mills in Barshor which have iron roofs. AGRICULTURE.

Before being ground the grain is sifted by women at home, first in the small-holed sieve, called *raghbél*, and afterwards in a larger one (*chugul*). A cylindrical wire sieve is used in some of the mills on the Hanna stream.

Mills are generally constructed by the owners of the land and water and the initial expenditure varies from about Rs. 200 to Rs. 400. A carpenter (*tarkhán*) is generally retained to carry out repairs and to dress the stones from time to time, and receives from one-fourth to one-fifth of the proceeds as his remuneration. The miller (*aséwán*) is given one-fifth to one-ninth of the proceeds as his wages, and he occasionally receives a small quantity of flour from customers as a tip (*khula khwand*). Customers must also provide oil, if the mill is to be worked at night. The owner pays the Government revenue. In Chaman a carpenter or blacksmith sometimes undertakes to construct a water mill on the land and water belonging to a land-holder, on the latter supplying the material. The former provides the labour required for construction and undertakes to keep the mill in repair and the proceeds are equally divided between them; the miller being paid his wages, at about one-fifth of the whole proceeds, from the builder's share. In Quetta the mills are sometimes farmed to shop-keepers.

The out-turn of a mill varies with the water power. It is estimated at about 5 maunds in Chaman, 10 maunds in Quetta and 12 maunds in Pishín in a day of twelve hours. The charge for grinding (*muz* or *shágirdána*) is generally levied in the shape of a share of the corn to be ground, and is about one-twentieth of wheat, one-fifteenth of barley and one-twelfth of maize and millet but, near Quetta and on the Shébo Canal, cash rates are also charged which vary from 3 to 6 annas a maund.

RENTS, WAGES AND PRICES.

Rents.

Reference will be found to the character of the tenures and tenancies in the District in a subsequent section. As might be expected in a backward country, in which crops are liable to great variations, rent almost always consists in a share of the grain heap.

Produce rents; method of distribution of the grain heap.

In such cases the distribution in unirrigated lands is generally made on the principle of an assignment of a portion of the produce for each of the chief requisites of cultivation: the land, seed, bullocks and labour; in irrigated lands a further share is assigned for the water. Variations occur in different parts of the District, and in the distribution of the produce on various kinds of land; and a brief reference is here made to the rates generally prevalent in each tahsíl.

RENTS, WAGES AND PRICES.

In Chaman the revenue is, in every case, paid by the landlord, and the division of the produce between him and the tenant is as follows :—

	Irrigated land.		Unirrigated land.	
	Landlord.	Tenant.	Landlord.	Tenant.
In cases in which a tenant supplies labour only	$\frac{4}{5}$ths.	$\frac{1}{5}$th.	$\frac{3}{4}$ths.	$\frac{1}{4}$th.
In cases in which a tenant supplies labour and bullocks	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
In cases in which a tenant supplies labour, bullocks and seed ...	$\frac{1}{3}$rd.	$\frac{2}{3}$rds.	$\frac{1}{10}$th.	$\frac{9}{10}$ths.

In the case of unirrigated lands, the one-tenth given to the landlord is known as the rent or *bohal*.

In Pishín a tenant, known as *kishtgar*, who provides labour, bullocks and seed in irrigated land, pays half of the gross produce to the landlord, the latter paying the Government revenue; but, if the tenant provides labour only, he is allowed one-fifth or one-sixth of the produce, after the deduction of the Government revenue. In unirrigated lands, if the tenant provides seed, bullocks and labour, he pays the landlord from one-eighth to one-tenth of the gross produce, after deduction of the Government revenue from the common heap. The above applies to lands where the revenue is taken by *batái*, in dry crop areas forming adjuncts to irrigated land subject to fixed cash assessment payable by the landlord the tenant takes one-sixth to one-tenth of the produce.

In irrigated lands in the Quetta tahsíl, the general principle already mentioned, of assigning one share to each of the five requisites of cultivation is generally followed. In unirrigated lands, except in the case of *lathband* tenants, to whom reference will presently be made, the tenant receives one-eighth of the gross produce, after deducting the Government revenue, when he supplies labour only; half of the produce, after deducting the Government revenue, if he supplies half the labour and bullocks; nine-tenths after deducting Government revenue, if he provides seed, bullocks and labour; and two-thirds of the produce when the landlord gives assistance in the labour required for cultivation, everything else being supplied by the tenant. In this last case the revenue also is paid by the tenant.

RENTS, WAGES AND PRICES.

In Shorarúd the general arrangement in irrigated lands is that the tenant provides labour, half the seed and the bullocks and, after the revenue has been paid out of the gross produce, the balance is divided equally between him and the landlord. In unirrigated lands the tenant receives one-fourth of the produce when he supplies labour only, and two-thirds when he supplies bullocks also, the seed being provided by the landlord and the revenue paid from the undivided or common heap.

In the case of *lathband* tenants in Quetta, the share taken by the landlord, who is responsible for the Government revenue, is one-fourth of the produce, while in Shorarúd it is generally one-tenth.

In the estates of certain minors in Quetta and Pishín which have recently come under the control of the Political Agent, the lands have been let to tenants for cultivation on cash rents, the land revenue being paid by the tenant in some cases and by the landlord in others. High rates are paid by *baniás* for land and water in the vicinity of Quetta on which vegetables are grown, the rates reaching as much as Rs. 140 per acre in cases in which manure is supplied by the landlord. The produce of orchards and lucerne fields are also let on annual leases to *baniás* the rates averaging Rs. 180 per acre for the former and Rs. 190 for the latter. For lands within the limits of the Quetta cantonment, cash rates have been recently substituted for the levy of a share in the produce. They vary in proportion to the facilities for irrigation, unirrigated lands paying Rs. 5-8 an acre while irrigated lands pay a minimum rate of Rs. 14-4-9 and a maximum of Rs. 111-10 per acre. The lands are leased for a year at a time beginning from October. In parts of Toba Achakzai the ancient custom of fixing the rent (*lékha*) in a number of goats or a quantity of grain for a plot of land is still maintained. For instance, the rent for a plot of land owned by the Jalézais and cultivated by the Mushki Kahol of the Haibatzais is two goats per annum (1904); and the Nekózais in Hisárgai pay 12½ maunds of grain to the Jalézais for a tract known as the Umrána land. The tenants are not, however, bound to pay these amounts in kind, but may commute to cash at current rates. Tenants in both irrigated and unirrigated lands are required to carry the landlord's share of the grain and fodder to his house, and in certain irrigated areas to bring him a few loads of fuel, to get his corn ground at the water mill, to construct mangers for his cattle, and to periodically plaster his huts.

Wages.

No cooly class exists among the cultivating population; tenants-at-will perform the services mentioned above, while the household work of men of means is invariably performed, in Quetta and Pishín by their servile dependants. In some Saiad and Tarín families poor Kákar women are employed for house-

RENTS, WAGES AND PRICES.

hold work, and boys, whose wages consist of their food, clothing and a small monthly salary, are employed to cut and bring fuel. Similarly boys are occasionally employed in Toba Achakzai to help in agriculture. At harvest time the labourers, who include women and children, receive a share of the crop, generally one-twentieth. In Toba Achakzai most of the cultivators harvest their own crops, but when labourers are engaged they are paid, as wages, a quantity of grain equal to the seed sown; in the Chaman plain such wages are double the amount of the seed. In parts of the Quetta tahsíl two systems of payment are adopted, one known as *hisáb* and the other as *satti*. Under the former system the reaper gets one *kauda* or handful of the harvested crop for every fifteen, twenty, or thirty *kaudas* which he may cut, the better the crop the less being the payment. Under the latter system, the reaper gets two *ghuazi*, or laps full of the harvested crop, as remuneration for a day's work; the reaper dividing the day into two parts: sunrise to midday, and 2 P.M. to sunset, and a *ghuazi* being paid for each part. The transport of the harvested crop to the threshing floor is left to the owner of the crop. An able-bodied reaper can in this way earn about 12 seers of grain and the same amount of chopped straw in one day. The *satti* system is prevalent in Shorarúd also.

Wages of shepherds.

Shepherds are generally engaged by the year and are given food, a proportion of the lambs and kids born during the year, part of the wool and, occasionally also, clothes. In the Chaman Sub-division the clothes given to a shepherd consist of a felt cloak (*kosae*), a shirt, a pair of trousers and a pair of sandals. The shepherd gets one lamb or kid for every ten sheep or goats made over to him, males and females being given in equal numbers. No wages are demanded or paid for he-goats and rams when they number twenty per cent. in a flock of 100, and 33 per cent. in a flock of 150 or more, but any in excess of these proportions are paid for at a small monthly cash rate called *paro*. When near home the shepherd is given cooked food but, if he is at a distance, he receives 44 seers of wheat per mensem for himself and his dog, and a donkey to carry the grain. In autumn and winter he is also given one or two seers of *ghí* and two seers of dried meat (*lándi*). In Pishín when a flock contains animals belonging to several persons, the shepherd is generally paid at the rate of two seers of grain per head per month, but in some places he gets two annas per head and his food is supplied by the owners in turn. When a shepherd is engaged by a single owner, he is given cooked food and, when absent from home, one maund of grain per mensem, and wages from July to October at the rate of one kid or lamb for every twenty born during the year (*loazhagae*), and from November to February at the rate of one-fourth of the wool shorn. From March to June he is given Re. 1 for every ten animals (*paro*).

In the Quetta tahsíl a shepherd receives one-sixth of the male and one-twelfth of the female kids or lambs born during the year, and his food. For the four summer months he is given one rupee for every ten animals and one-sixth of the wool. The shepherds and cow-herds, who tend the goats and cows of townspeople, are generally paid at the rate of four annas per goat and one rupee per cow per month.

In Shorarúd a shepherd is given his food, wool for a felt cloak, a pair of sandals and one-tenth of the lambs and kids produced during the year.

Camel-herds.

Camel-herds in Shorarúd receive either one-fortieth of the camel-calves born during the year or a pair of sandals, a felt cloak, four annas in cash per camel and one *kása* of grain per camel per month. In Chaman a camel-herd is paid eight annas per camel per annum and is given his food, or when at a distance from home 28 seers of wheat and one seer of meat per month.

Village-servants.

Each important village has one or more headmen, whose remuneration has been mentioned in the section on **Land Revenue.** There is also generally a *mullá*, who conducts prayers and officiates at marriage, funeral and other domestic ceremonies and who lives by the fees, alms, and *zakát* of the villagers. The *zakát* is supposed to comprise one-tenth of the produce from land and one-fortieth from live-stock, but this portion is not set aside in all cases. In the Chaman Sub-division the cultivators pay their *mullá*, in the month of *Ramzán*, two and a half seers of wheat or four and a half seers of barley for every male (*sarsáya*).

The only ubiquitous village servant is the blacksmith who makes and repairs the implements of husbandry, but in some places the carpenter, the *míráb* or water superintendent, and *tohae* or crop watcher are also met with. In the Chaman Sub-division carpenters are almost unknown. The few who are found are given three to, five *kásas* of grain at harvest, half a seer of dried meat in winter, a seer of fresh meat at the *Id-uz-zuha* festival, the hair of one goat and the butter extracted from a single milking of the whole flock. In Pishín both carpenters and blacksmiths are employed, the former being paid one *gonda*, or bullock load, of harvested wheat per *shabánaroz* of water, and a *kása* of grain from the grain heap, while the latter get a bullock load of wheat, and 12 to 14 *kásas* of grain per *shabánaroz*, as well as a piece of dried meat. Flockowners give the blacksmith the wool shorn from a single sheep or goat and the butter extracted from one milking of the whole flock.

In the Quetta tahsíl the wages of a carpenter and blacksmith vary, but consist approximately of one bullock load of wheat crop, one plot or *kurda* of lucerne, 2 to 14 *kásas* of wheat, 2 *kásas* of maize and in some places 2 *kásas* of barley per *shabánaroz*.

RENTS, WAGES AND PRICES.

In Shorarúd the blacksmith, besides plying his ordinary trade, is required to carry messages from village to village and assist at marriage gatherings and is given one *ghézh*, or the quantity that can be enclosed in the extended arms, from the wheat crop as well as five seers of grain per *kharwár*, and also one *kása* or five seers of grain from each family.

The *míráb* or water superintendent, who is charged with the division of water and the maintenance of the water channels, is compensated in some places by a special allowance of water from the source which he supervises, and in others by payment in grain at a fixed rate.

The *tohae* or crop watcher is known in Quetta only and receives one *tstai* or man's load from the crop over which he keeps watch.

Labourers.

Cooly work proper is a peculiarity of the industrial centres which have grown up since the British occupation, and in which a plentiful supply of labour from Makrán, Afghánistán, Sind and the Punjab is always to be found. Before the opening of the railway the rates paid to this class were high, but in 1893 efforts were made by the principal Government departments at Quetta to reduce monthly wages to Rs. 10 or 6 annas a day. In 1900 suggestions were made for the adoption of a daily rate at five annas four pies a day, but the rate remains at about 6 annas. Good Afghán navvies can earn 8 annas a day.

Domestic servants and almost all skilled labourers are imported from India, chiefly from Sind and the Punjab and, owing to the severity of the climate during winter and the comparatively large amount of clothing and fuel required in consequence, wages are higher than those usually prevalent in India. Among Europeans the wages of domestic servants vary from Rs. 10 to Rs. 25 and among natives from Rs. 6 to Rs. 9 with food. In 1889 rules were framed by the cantonment authorities for the registration of domestic servants and a scale of pay was fixed, but no success seems to have attended this measure. In 1901 orders were issued by the Local Government fixing lower rates of pay than those then prevalent for menial servants such as sweepers, *bhishtis*, *chaukídárs* and office peons and they now vary from Rs. 8 to Rs. 10 per mensem. The wages of skilled labourers vary from Rs. 20 to Rs. 45, and of mechanics from Rs. 45 to Rs. 90. It appears that some reduction has been effected in the wages of this class of labour during the past thirteen years as in December 1891, the wages of a blacksmith were reported to be Rs. 35 and those of a mason Rs. 40, while in December 1904, the wages of these classes were stated to be from Rs. 30 to 35 and from Rs. 35 to Rs. 40 respectively.

Káréz diggers.

Káréz digging, which is an important occupation is in the hands of transborder Afgháns, chiefly Ghilzais, who visit the District in winter. They generally work in parties of four and

in addition to such other payments as may be agreed upon, usually receive food from their employer. This ordinarily consists of one maund of wheat, one seer of salt and half a seer of tobacco per man per month. The owner also supplies the windlass (*charkh*), all necessary tools, oil for lamps and loin cloths (*lang*). Arrangements for payment in a lump sum (*ijára*) and the system known as *khat kashi*, and contracts for payment by the yard are to be found existing side by side. In Shorarúd a lump sum is fixed to be paid on the production of a quantity of water sufficient to irrigate the area of land in which a specific quantity of seed can be sown. Thus, Nazar Muhammad and others of Muhammad Khél in 1904 entered into a contract with Gul Muhammad and other *káréz* diggers to dig a *káréz* near Panjpái agreeing to pay them a lump sum of Rs. 2,050 on the production of sufficient water to irrigate an area in which three *kásas* of grain could be sown. Under the *khat kashi* system a capitalist or gang of labourers engages to construct a *káréz* in another person's land and, if successful, the water and land which it can irrigate are generally divided equally between the owner of the land and the excavator.

Payment by the piece is, however, the most common method. The rates vary according to the nature of the soil in which the *káréz* is excavated—and the following, quoted by the tahsíldár of Pishín, may be regarded as fairly representative :—

(*a*)	For a well 9 feet deep in soft soil. (The diggers determine the size of the well and no regard is paid to it in fixing wages)	Re. 1
(*b*)	Well in hard soil 6 feet deep	„ 1
(*c*)	Open channel in soft soil 9 feet deep, about 4 feet wide and 9 feet long	„ 1
(*d*)	Tunnel connecting well $7\frac{1}{2}$ feet per rupee in soft soil, 6 feet per rupee in hard soil and 3 feet per rupee in still harder soil. Height and width does not matter.	
(*e*)	Lining with stone (*sáng chín*). Open channel (about $1\frac{1}{2}$ feet wide) with a lining 15 feet long, 2 feet high and $1\frac{1}{2}$ feet thick ...	„ 1
(*f*)	If the channel has to be covered in with stones the rate is 10 feet by 2 feet by $1\frac{1}{2}$ feet for	„ 1

NOTE.—If the height exceeds 2 feet, the rate is about Re. 1-8.

The stones for lining have to be provided by the owner; food is not supplied whilst the men are doing lining work. For cleaning *kárézes* and channels, the Ghilzais are sometimes engaged on a daily wage which varies from 4 annas to 6 annas in addition to their food.

RENTS, WAGES AND PRICES.

Wheat is the staple food grain in the greater part of the District but maize and millets are also used in the hilly tracts such as Barshor and Toba. Firewood and chopped straw for fodder also form important items in domestic economy. With its large garrison, the population consumes more than the District produces even in ordinary years, but when there is an unexpected influx of troops, or labour is attracted by the opening of large works or when bad seasons occur, prices are liable to an abnormal rise. In the early part of 1839 when the army of the Indus reached Quetta the price of grain went up to 3 seers per rupee and of flour to 2½ seers, while that of chopped straw or *bhúsa* was Rs. 4 per maund and a small bale of lucerne was sold for five rupees. In 1877 wheat is said to have been selling at one and a half maunds for a rupee and *bhúsa* had no value in Pishín, but, after the occupation of the valley in 1878, prices rose and during the eight years 1879-80 to 1886-87 the revenue wheat was sold at an average of Rs. 5-3-6 per maund, barley at Rs. 3-2-3, and *bhúsa* at Re. 1-6-9, the highest rates being Rs. 8 for wheat, Rs. 4 for barley and Rs. 3 for *bhúsa* in 1881-82 and 1882-83. In 1885-86, at the time of the Panjdeh incident, the price of wheat varied from 9 to 7 seers per rupee. The prices of staple articles for each tahsíl for the ten years ending with 1902 are shown in table X., Vol. B. The years 1897-98, 1900-01 and 1902-03 were dry ones during which the average price of the revenue wheat was Rs. 3-4-7, Rs. 3-6-8 and Rs. 3-10 per maund respectively, while its retail price was as under:—

		Quetta.	Pishín.	Chaman.
February	1897	9 seers.	10½ seers.	9 seers.
,,	1900	10 ,,	9½ ,,	12 ,,
,,	1902	13 ,,	15½ ,,	13½ ,,

Writing in 1887 in connection with the conversion of the revenue levied in kind in certain villages in the Pishín tahsíl into cash assessment, Sir Oliver St. John said: "The prices of wheat in Quetta and the assigned districts in future years will, it would seem, be mainly governed, like those in northern India, by the English market. The present is an abnormally dear year, wheat has been scarce in the Punjab and too dear for export to England. The railway has, therefore, exercised little influence on prices here. Supposing however, that wheat falls to its normal price in the Punjab and Sind, it is obvious that its cost in Quetta should fall to the rate prevailing at Sukkur plus the cost of transport from Sukkur to Quetta." The truth of these words is exemplified by the approximation of prices

in Quetta with those prevailing in Sind and parts of the Punjab as exhibited in the following table which gives the price of wheat in February and July 1905:— WEIGHTS AND MEASURES.

	FEBRUARY.	JULY.
	Seers per rupee.	Seers per rupee.
Quetta	$11\frac{1}{2}$ to $12\frac{1}{2}$	$11\frac{1}{3}$
Shikárpur	14	13
Multán	$14\frac{3}{4}$	$13\frac{1}{2}$
Lahore	16	16

WEIGHTS AND MEASURES.

Measures of weight.

Up to 1891 different weights were in use in the Quetta bazar, the principal one being a seer which weighed 90 tolas; in parts of Pishín and Chaman the Kandahári seer of the same weight and known as *chár yak*, was used. The Quetta seer was stamped by the Kalát officials previous to the British occupation. Indian weights with a seer of 80 tolas and a maund of 40 seers were introduced by executive order in all the bazars in the District in 1891, the weights now in general use being those of 5 seers, $2\frac{1}{2}$ seers, 2 seers, 1 seer, half-seer, quarter-seer, one-eighth of a seer, chittack and half-chittack. Bulky articles such as coal, fuel, fodder are frequently dealt with by the maund of 100 pounds. Some shopkeepers use spring balances, but the people of the country mistrust this method of weighment.

Troy weights.

The weights used by the goldsmiths are those in use in other parts of India, the lowest unit being a ratti; 8 rattis make a másha and 12 máshas one tola.

Measures of grain.

Outside the towns and bazars grain is still sold by wooden measures and not by weight, these measures being of different capacity in different parts of the District. The following are the measures in ordinary use:—

(*a*). Quetta Tahsíl, the *kurwae*.
4 kurwae = 1 kása.
80 kása = 1 kharwár.

(*b*). In Shorarúd, the *cháryak*.
4 cháryak = 1 kása.

(*c*). In Pishín, the *kurwae*.
2 kurwae = 1 ním wuzhae.
2 ním wuzhae = 1 kása.
80 kása = 1 kharwár.
60 kása = 1 gonda or bullock load.

(*d*). In Chaman, the *cháryak*.
2 cháryak = 1 ním man.
2 ním man = 1 man or kása.
25 man = 1 lang or half camel load.
50 man = 1 camel load.
100 man = 1 kharwár.

WEIGHTS AND MEASURES.

The *kharwár*, *gonda* and *lang* are merely nominal amounts, the wooden measure in daily use being the *kása*. The capacity of this *kása* varies in different parts of the District as will be seen from the following table:—

Locality.	Equivalent of *kása* in Indian weights.			
	Wheat, seers.	Barley, seers.	Maize, seers.	
(a) Quetta Tahsíl—	...			
Sariáb circle ...	5 to 5½	3¾ to 4¾	4 to 4½	
Kási circle ...	5	5	...	
Kuchlák circle ...	4	3⅕	3⅘	
Malézai, Gadazai, Simli and Katír in Kuchlák ...	5	4	4¾	
Baléli and Durráni circles	5	4	4½	
Nau Hisár circle ...	4¾	4¾	...	
(b) Shorarúd	4¾	3½ to 4	4¾ to 5	
(c) Pishín...	4	3	4	In Saiad villages a *kása* of wheat contains about 5 seers.
(d) Chaman	4½	3⅜	4½	...

In ordinary parlance, when reference is made to a *kása*, its equivalent weight in wheat is intended to be conveyed. Traders from Afghán territory coming to the Chaman, Pishín, Kila Abdulla and Gulistán bazars still carry on their transactions in the Kandahári maund known also as the *ato-lastumanai* maund, i.e., 18 times twenty, or 360 rupees, equivalent to 4½ seers. For weighing wool, especially in nomad encampments, a rough lever balance, known as *tála-largai*, is used in Chaman and Pishín. It is made of a fairly heavy stick, three feet long and three quarters of an inch thick, the pivoting point of which is determined by a standard weight. The point of suspension once ascertained is marked by a notch, and the stick is easily carried from one place to another.

Green fodder, such as lucerne or maize stalks, is sold by *kurdas* or plots, the area of which varies, and bundles of dry lucerne (*mora*) are sold by the number. Fodder and fuel is sold by the camel load, donkey load, or bullock load, or by the *pétai*, i.e., the load which a man can carry on his back.

Weights and Measures.

Miscellaneous measures.

Linear measures.

In the towns and bazars the standard yard of 16 *girahs* or 36 inches is in use, but the people of the country still employ the cubit (*hatta*), or the Kandahári yard which is about 42 inches, for measuring cloth, *káréz* tunnels and mud walls. Two *lwésht* or spans make 1 *hatta*, and 2 *hattas* make 1 Kandahári yard. The *hatta* is an indefinite measure, which varies with the stature of the customer, and is measured from the projecting bone of the customer's elbow round the end of the middle finger, when extended straight, and back to the lower knuckle joint.

Superficial measures.

During the Settlement the measures adopted were acres, roods and poles, and round Quetta the people have now begun to recognise these measures, and land is sold by them; but in the greater part of the District irrigated land is known by the proportion of water attached to it, while unirrigated land is sold by plots. Thus, the land and water under a permanent source of irrigation are both divided, and an amount of land is recognised which is attached to a *shabánaroz* of water or other minor division. The term *jora* or *gholba* is frequently used but has no definite value, merely denoting the amount of land that can be ploughed by a pair of oxen in twelve hours. In Shorarúd, irrigated land was formerly sold by the *pal*, or length of a man's foot, but here too the system of sale by shares in water has been adopted.

Measures of time.

People, who resort to the towns and frequently come in contact with Government officials, know the English months, but in that part of the District where Pashtú is spoken the Muhammadan lunar year is still observed. The Arabic names of the months and their local equivalents are given below:—

Arabic Name.	Local month.
Muharram	Hasan Husain.
Safar	Saparra.
Rabí ul-awal	Lumrai khor.
Rabí-us-sáni	Dó-ama khor.
Jamádi-ul-awal...	Dré-ama khor.
Jamádi-us-sáni	Ustarai or tslorama khor.
Rajab	Khudae miásht.
Shábán	Landae barát.
Ramzán	Roza.
Shawál	Kuchnai or Alak akhtar.
Ziqád	Manzi mián.
Zilhij	Loe akhtar.

WEIGHTS AND MEASURES.

In the southern part of the Quetta tahsíl, which is occupied by Bráhuis, the months are recognised partly by Hindu and partly by local Bráhui names, they are Elo ír (corresponding with January), Bhala Id, Holi, Krai, Hatam, Tírma, Ahár, Sáwan, Badrah, Sohél, Rocha and Awaliko-ír. The seasons recognised by cultivators and flock-owners are described in the section on **Agriculture.** The days of the week are those recognised by Muhammadans, Friday being the first day. The day (*wuraz*) and the night (*shpa*) are divided into the following parts :—

Vernacular Name.	Explanation.
Sobé kázib	The period a little before dawn.
Spédo dágh	Dawn.
Khar sahár	The period a little before sunrise.
Nimar tsarak	Sunrise.
Sahár	Morning.
Tsásht	About 10 A.M.
Takanda gharma or Ním wuraz	Noon.
Ziwál	After 1 P.M.
Mápashín	The period from 2 to 4 P.M.
Ghat mázígar	About 5 P.M. in winter and 5 to 6 P.M. in summer
Mázígar	5 P.M. to sunset.
Másham	An hour after sunset.
Tiyára másham	Period after evening when it is dark.
Mákhustan	9 to 10 P.M. in summer or 8 to 10 P.M. in winter.
Akhar Mákhustan or Tér Mákhustan.	About 11 P.M.
Níma shpa	Midnight.
Pésh-lamae	Early morning.

The divisions of the day most generally recognised are those connected with the Muhammadan hours of prayer, viz.: Sahár, Mápashín (Nimáz-i-péshín), Mázígar (Nimáz dígar) and Mákhustan (Nimáz-i-khuftan).

Currency.

Before the British occupation the *kaldár* or British Indian rupee was sparsely used, the coins most generally current being known as *Kandahári* and *Kábuli*. This currency is still used in dealings with Afghán traders and comprises the following items, the lowest unit being an *ikki* made of copper :—

3 ikki = 1 sháhi.
2 sháhi = 1 misqáli.
2 misqáli = 1 abási.
3 misqáli = 1 qirán or ghirán
3 abási = 1 kandahári.
5 abási = 1 kábuli.

WEIGHTS AND MEASURES.

The *sháhi* and the *misqáli* are merely nominal standards, and no coins of these denominations are actually current. The silver coins are exchanged at market rates, the present value (1905) of a *kábuli* rupee being about seven annas nine pies, and of a *kandahári* rupee about four annas and eight pies. The *Ghajari* or Persian rupee, the value of which is the same as that of a *kábuli* rupee, is used in dealings with Persian traders; the coins in local use are the rupee and the *ghirán* or *qirán*. The lowest unit of this currency is the copper coin called *púl*.

2 púl = 1 sháhi.
5 sháhi = 1 ruba.
2 ruba = 1 panáh bád.
2 panáh bád = 1 ghirán or qirán.
2 ghirán = 1 ghajari rupee.

The *ghirán* and the rupee are made of silver.

The people have no names for the pie or half-pice and they are not used outside Quetta town. The names for the other coins are given below:—

Paisa = Pice.
Dabbal or loe paisa = Half-anna.
Ana = Anna.
Sháhi = 2 anna piece.
Paoli = 4 anna piece.
Nimkai or abási = 8 anna piece.
Kaldár = Rupee.

MATERIAL CONDITION OF THE PEOPLE.

Such glimpses of the people as we are able to gain in the early part of the nineteenth century indicate a state of abject poverty. Masson, who visited Kila Abdulla in 1827 on his way from Kandahár, remarked* that the men who came from the village to claim duty from the caravan were "most beggarly dressed and without shoes," and Dr. H. W. Bellew, while visiting Quetta in 1872, wrote of the Dumars: "These people have no large villages, but are scattered over the hills in caves and sheds with their flocks and sheep. During the winter they descend to the lower valleys, where they pass the time in their black tents; they cultivate only sufficient ground for the supply of their wants and for the most part live on the produce of their flocks, such as milk, butter, flesh and the inspissated cheese known as *krut*. From the goats' hair they manufacture ropes and the black tents called *kizhdi*, and from the sheep's wool they make the thick felt cloak called *kosae*, which with a pair of loose cotton trousers constitutes the whole winter dress of most of the people."

Men of middle age will still relate how, in the time of their fathers, the use of shirts was almost unknown among the men,

* *Journeys in Baluchistán, Afghánistán and the Punjab*, Vol. I, page 323.

MATERIAL CONDITION OF THE PEOPLE.

their dress consisting of a pair of sandals (*gauli*), trousers made of coarse cotton cloth, known as *shoi*, and imported from Sind, a conical cap (*kulla*) or a turban, with a felt coat (*kosae*) or open waistcoat (*gratai*). No boys wore trousers before they were 15, first to keep them safe from Marri raiders, who never killed a boy who had not gone into these garments, and secondly because cloth was scarce. Till within the last decade, boys 8 or 10 years old might have been seen running about the Hanna valley with nothing on but a *kulla* and, if given a piece of cloth to hide their naked body, would tie it round their head. The single white shirt belonging to the head of a household was religiously kept for a visit to the Political Officer at Quetta, and carefully put away for the next occasion on return. The women generally wore nothing but a loose long shift of coarse cloth, and a head sheet. The use of ornaments was almost unknown except perhaps a pair of zinc bracelets and a necklet of the same metal.

The conditions described above have altered for the better in nearly every part of the District, except among the poorer classes of Achakzai Toba, who still live in the blanket tent or *kizhdi*, which in winter is shared with the family by the flocks and cattle. The use of bedsteads and lamps is unknown and the household furniture is limited, a copper bowl (*gadwa*), a wooden plate (*kása*), a few home-made earthen pots and some sheep skins answering all purposes. Signs of prosperity, however, are visible among others. Their dress is better, the women possess a few silver ornaments, and the furniture comprises some bed coverings and carpets in addition to the articles already mentioned. The leading Achakzai families in Pishín even use silk for their dress, wear boots, socks, and embroidered coats and waistcoats, and drink tea daily.

Everywhere mud-built villages are now springing up to take the place of the blanket tents and, though most of them are composed of houses which are poorly built with mud roofs, some are sufficiently spacious and comfortable. Here and there are to be observed commodious houses roofed with corrugated iron, especially in the neighbourhood of Quetta. For the women's dresses coarse cloth is being replaced by *sáni chhít*, a cheap printed chintz imported from Shikárpur, and *ilaicha*, a striped and coloured cloth also imported from Sind and the Punjab; red *sálu*, locally known as *ritchi*, is in great demand, and well-to-do families use silk and merino. The men's dress is made of cotton, that principally used being the unbleached calico (*márkin*) known as *Fattú wála*, (the cloth having been introduced, so local merchants state, by Seth Fatteh Chand of Karáchi) and *chalwár*. The household furniture also shows improvement.

The Taríns and Saiads of Pishín owing to the trade in which they engage, and the Kásis of Quetta, on account of the privileges which they enjoyed in regard to their land, were

always in somewhat easier circumstances than their neighbours, but still the use of coarse cloth, sandals and felt cloaks was not uncommon among them. The protection afforded by the presence of British troops, the law and order introduced, the extension of cultivation and the ready market for all produce has altered these conditions, and many now have spacious clean houses built of mud, furnished with carpets and *newár* beds and provided with lamps. Their dress has improved, especially by the introduction of thick woollen stuffs for winter wear. The women of the traders, as well as of prosperous cultivators, now consider it derogatory to do their own household work and employ domestic servants whilst they wear garments made of silk or merino and spend their time in sewing and embroidery. Ornaments too are more numerous, and the men are beginning to buy dogcarts and bicycles. The food, too, is much better in quality.

MATERIAL CONDITION OF THE PEOPLE.

Another indication of the prosperity of the people is the rise in *walwar* or bride-price and the tendency to polygamy. In pre-British days the price of a bride varied from Rs. 50 to Rs. 100 but now (1905) Rs. 300 to Rs. 500 are paid, while cases are not unknown in which as much as Rs. 2,000 or Rs. 5,000 have been given. Yet, notwithstanding the rise in bride-price, there are manifest indications that a multiplicity of wives is more common than before.

The increasing prosperity of the people is also shown by the increase which has taken place in the value of land. In 1878-1883 land was purchased for the town and cantonment of Quetta at Rs. 100 an acre, but the prevailing price in the town for building sites is now about Rs. 3,000 an acre, and some sites in a central locality of the town which were recently (1905) sold by auction, fetched over Rs. 12,000 an acre. In Pishín, too, the value of land and water is about ten times what it was in 1883. In Toba, however, the value of land is said to have fallen to some extent owing to the emigration of some of the Achakzais to Afghán territory. But, on the other hand, land under *kárézes* near the Chaman cantonment is becoming increasingly valuable.

These remarks may be summed up by quoting a report on the material condition of the people which was submitted by Major J. Ramsay, C.I.E., the Political Agent in 1902. He said: "The agricultural population lives more luxuriously than it did in the old days. Tea, which was scarcely known in 1880, is now a common luxury indulged in by all who can afford it. Sandals have given place to leather boots and shoes. Clothes, especially trousers, are made of better material. Waistcoats, watches and all other European luxuries are quite common now. In the old days it used to be a struggle for life but things are much easier now. Silver ornaments are much commoner than of old, necklets, head ornaments, ear-rings and bracelets

MATERIAL CONDITION OF THE PEOPLE.

being the most common form thereof. Few gold ornaments are used, except by families of very well-to-do people." As regards artisans he wrote: "The condition of artisans and labourers has improved in direct ratio with that of the *zamíndárs;* they wear much the same clothes and have much the same meals. These artisans, that is to say, village artisans are paid in kind, not cash, but the value of produce has risen, so though actually not receiving more grain than they used to get, they get more valuable proceeds."

Non-indigenous population.

The Indians residing in the towns and bazars, who comprise men serving in the various departments of Government, contractors, artisans, private and menial servants, and the mercantile classes, though suffering under the disadvantages of absence from home, severity of climate and high prices for food and fuel and other articles, are enabled by the comparatively high wages which they earn to live in reasonable ease and comfort. The contractors and traders of various classes appear to be especially prosperous, particularly those who deal in food stuffs, fuel and fodder and various kinds of cloth.

FORESTS. Area under forests.

The District possessed six reserved forests covering a total area of 54 square miles in 1903.* Juniper (*Juniperus excelsa*), pistachio (*Pistacia khanjak*) and tamarisk (*Tamarix articulata*) are the principal trees. The juniper forests covered 39 square miles and the pistachio forests 13 square miles.

Owing to the large railway works and the growth of garrison towns in the District, much denudation of existing forests took place in the eighties, before any restrictions had been placed on felling, and reservation has hitherto been carried out chiefly with the object of preserving the larger trees for fuel. But in the vicinity of Quetta the denudation has now extended to the bush and plant growth, consisting chiefly of *Prunus eburnea* (*zhirga*), Caragana (*mákhai*) and southernwood (*tirkha*), which grow on the sides of the hills, with the result that much detrition of the soil is taking place, accompanied by a corresponding diminution of the available supply of fodder for sheep and goats. It is a question whether efforts should not now be made to prevent the stubbing up of such bushes in unprotected areas in the interest of the villagers and graziers themselves. Although the people have, so far, generally opposed afforestation, there are indications that they are gradually beginning to appreciate reserved areas as a source of supply of cheap fodder.

Areas in which reservation is being considered (1905).

The reservation of the following areas is under consideration (1905): Taga, Khur, Tur, Murdár, Mangal and Mashélakh. Except the Mashélakh tract on which pistachio grows, these

* NOTE.—In 1904, two more Forest reserves were gazetted, *vide* Local Government's Notification No. 1940, dated 5th April 1904, viz., Babri, area 2 square miles; and Mazár, area 3 square miles. Both are juniper forests.

FORESTS.

areas are mostly covered with juniper. Their area is approximately 59 square miles. In the Khwája Amrán range some areas exist, bearing pistachio, which are worth supervision and one tract, Zerga Shéla, about 1 square mile, is already under strict protection and closed to grazing, as a test of the natural regeneration of pistachio in that locality.

The area covered with *Tamarix articulata* in the Surkháb valley near Pishín is protected against camel grazing by executive order, through the tahsíldár in Pishín.

Juniper reserves.

The juniper forests are Zarghún north, Zarghún central, Mári Chak (Mara Chigh), and Súrghund.

Zarghún north is a block occupying the north face of the Zarghún mountain with an area of 9 square miles. It was reserved in November, 1890. Zarghún central was reserved partly in January, 1891, and partly in August, 1893, and comprises the entire catchment area of the Quetta water works supply. The boundary is demarcated, wherever necessary, by large white-washed pillars of dry stones. The area ($26\frac{13}{16}$ square miles) is in the form of a horse shoe, the convex portion formed by the Zarghún watershed and the back by the steep cliff above Urak. Mári Chak (Mara Chigh) consists of a long and narrow strip of land on Takatu, lying north-east and south-west, and comprising the upper portion of the Mári Chak valley, which drains to the south-west, and a small valley, which drains to the south-east, below the main peaks of the range. It was reserved in July, 1893, and covers an area of $2\frac{55}{64}$ square miles. Súrghund lies partly in Quetta-Pishín and partly in the Sibi District, and was reserved from 1st January, 1895. The portion lying in Quetta-Pishín has an area of about 8,500 acres. The Shamozais and Dumars have rights of pasture in this forest.

The juniper in these forests is almost gregarious but is mixed with an under-wood of *zhirga* (*Prunus eburnea*) and *mákhai* (*Caragana*); other trees met with are ash and pistachio. In rainy years cumin seed grows in the Zarghún hills. As *Prunus eburnea* and *Caragana* coppice well, they seem likely to afford a useful supply of fuel, if cut under proper regulations.

Pistachio reserves.

The pistachio forests are at Gwál, in the Pishín tahsíl; and at Hazár Ganji in the Quetta tahsíl. At the former place $4\frac{1}{2}$ square miles were reserved, in 1890, in a compact block, between the Ulgai and Gwál villages, which extended from the watershed to near the bottom of the valley. The area entirely closed at present (1905) covers 900 acres and here there are no rights; but in the open portion the Ulgai and Gwál villagers possess the right to pasture their flocks and cattle and to gather Khanjak fruit (*shinae*). The Hazár Ganji forest, covering $8\frac{1}{2}$ square miles on the eastern slopes of the Chiltan Range, was reserved in December, 1890. Not more than about 4,000 acres are fit for forest growth but the rest has been included, to secure a good

FORESTS.

boundary and to protect the steep cliffs and slopes, of which the higher part consists. The principal tree is *khanjak*, with a little ash in the plain and on the lower slopes; on the higher and mountainous portion juniper occurs. The villagers have a right of way along the main ravine up to the Chiltan shrine and certain Shahwánis* are permitted to gather such *khanjak* fruit as may not be required by the Forest department for seed, but, in case of damage to the fruit, this privilege is liable to be withdrawn.

Tamarisk reserve.

The tamarisk tract is known as the Popalzai forest and was reserved in 1890-91. It is a rectangular block marked by cleared lines and earthen mounds lying between the villages of Popalzai, Jehánábád, Maizai and Bádízai and traversed by the military road to Kila Abdulla. The area is $2\frac{59}{160}$ square miles and the principal tree is *Tamarix articulata* (*ghaz*).

Two small plantations are maintained near Quetta town, called the Dhobi Ghát and Zangi Lora or Galbraith Spinney. They cover an area of 63 acres, are planted with willow, apricot, almonds, mulberries and are used for experimental purposes.

Reserved trees.

There are no protected forests but certain trees, when growing on waste land in the District, are treated as reserved trees, and their cutting and lopping is regulated. They include *Juniperus excelsa*, *Pistacia khanjak*, *Pistacia mutica*, *Fraxinus xanthoxyloides*, *Populus Euphratica*, and *Tamarix articulata*.

Shooting.

Shooting in State forests is regulated by rules contained in the Agent to the Governor-General's Notification No. 6684 dated the 3rd October 1902, and is only allowed by pass which can be obtained from the Political Agent on payment of fees.

Forest staff and fuel supply.

The forests are in charge of a deputy ranger and a forester, who are subordinate to the Extra Assistant Conservator of Forests, and are assisted by 20 guards who are, so far as possible, recruited from the people of the country (1904). Timber for building purposes and fuel is mostly imported from Sind. In 1891, a committee consisting of the representatives of the Geological, Forest, Military and Railway departments assembled at Quetta, under the presidency of Sir Robert Sandeman, to consider the question of the fuel supply and it was decided that the main object of Government should be to maintain existing and future forest reserves intact, for use in times of emergency. Government departments within the reach of the railway are therefore supplied from external sources and special railway rates are allowed. A forest depôt is maintained at Quetta, in which the fuel is stacked in the summer and sold to Government departments as well as to the public in winter

* Details are given at page 59 of the *Baluchistán Forest Manual*.

at fixed rates. This depôt has effectually kept down the price of fuel, which was sometimes liable to sudden rises before the system was started. FORESTS.

Shébo Canal plantation.

A scheme on which much money was spent in the later eighties and early nineties, without, however, attaining the objects in view, was the Shébo Canal plantation. This plantation was laid out, in 1888, on a tract irrigated by the Shébo Canal, with the object of securing a supply of grass, for the cavalry regiment in Quetta, and of fuel. The undertaking was strictly military, the local forest officer being in executive charge. The area taken up was 2,682 acres, which were declared a State forest, but the Military transferred the land to the Forest department in 1892 and in 1896, after Rs. 1,20,797 had been spent, the scheme was abandoned as the fodder grown was more expensive than *bhúsa* and reservation for tamarisk fuel was considered unlikely to result in financial success. In a country where water is in great demand for agricultural purposes, forest plantations of the kind contemplated in the scheme are never likely to be a success. The total income from 1888 to 1897 was Rs. 16,293. Three out of the five blocks, into which the plantation had been divided, were returned to the villagers and two, covering 728 acres, were made into a District grazing reserve. They are now (1905) in charge of the Special Irrigation Officer and are intended for a grazing reserve in case of severe famine. The only trees remaining alive are tamarisk, which are watered periodically and provide stakes and pegs for the maintenance of the canals and for survey work. Some little income is derived from the sale of branches for fuel and building purposes. A small plantation of mulberry trees was started in 1904-05.

Khushdil Khán grass reserve.

Another abortive scheme was a grass reserve established under the Khushdil Khán Reservoir, for which 500 acres and 5 poles were acquired at the beginning of 1894, and declared a State forest. Rs. 3,921 were paid as compensation for the 261 acres odd of dry crop cultivable area included in the forest. Experience, however, soon showed that the supply of water was precarious and that fodder, such as cereals and lucerne grass, could not be profitably cultivated, while the conditions were adverse to the growth of trees for fuel at profitable rates, and it was decided to abandon the scheme in August, 1896, after a total outlay of Rs. 12,000 had been incurred. From January 1st, 1899, a ten years' lease of the land was given to two Achakzais for purposes of cultivation, revenue being paid at the rate of one-third of the produce on the irrigated part and at one-sixth on the dry crop part. If the land is watered from the Khushdil Khán Reservoir, the revenue is credited to "Irrigation"; otherwise it is shown under the ordinary land revenue of the District.

FORESTS.
Important forest trees.
Juniper, *Juniperus macropoda* or *excelsa* (P. *obusht* Br. *apurs*).

The juniper grows in hilly country and apparently there are two essentials to its existence, viz.: absolute altitude, that is to say, it must have a certain minimum altitude, and relative altitude, that is, its absolute altitude must be less than that of the hills in the neighbourhood which afford it protection. Subordinate to these conditions there must be a certain degree of moisture. In places where these favourable conditions exist, accompanied by limestone formation or limestone mixed with other stones, juniper is generally found at altitudes from 6,500 to 8,500 feet, but more vigorously from 8,000 to 8,500 feet. In Quetta-Pishín it is found on the Chiltan Range, in the Srakhulla pass, round the north-eastern slopes of Takatu, on the Zarghún mountains, in the hills in Kákari Toba and at Chinár in Achakzai Toba.

The sap wood is white, the heart wood red and very fragrant, often with a purplish tinge. It has the same agreeable odour as the wood from which pencils are made, is light and, though not strong, withstands the action of moisture to a remarkable degree. It is used for making water-channels (*tarnáwahs*), house-posts and beams. In the highlands the bark of the tree is largely used for roofing huts, and temporary shelters, known as *manhas*. The trees are extremely slow in growing and never attain a great height, few being over 60 or 70 feet. The fruit, which is known as *pálo* by Pashtú speakers and as *ahú-bér* by the Bráhuis, appears in spring and is believed by the people to ripen in the third year. For food the berries are boiled in a small quantity of water, when they become like jelly and are blackish in colour. After extracting the kernels, the jelly, which is locally known as *dusha*, is eaten, especially in time of scarcity. It is also believed to be a cure for colds. The jelly is sometimes mixed with *ghí* and used for lining the skins (*zík*) in which *ghí* is stored, as the resinous substance sticks to the skin and prevents percolation. As a drug, the green leaves of the juniper are steeped in water for four days and the water is then administered to sheep for a liver complaint, known as *zhazhai*. Sheep suffering from cough are also locked in a hut, in which a quantity of dry leaves are burnt slowly, the smoke being considered to give relief in about an hour.

In his report, for the year 1904, the Reporter on Economic products to the Government of India stated that the berries were extensively used for scenting soap in Europe and, at his suggestion, the North-West Soap Company of Calcutta made experiments with berries sent from Baluchistán. After careful examination the manager of the company reported in March, 1905, that their value as a perfume for soap was practically nil, but observed that essential oil of juniper berries was an article of commerce and its price, quoted in English and

Continental lists, was about 7 shillings per lb. The oil is used medicinally and possesses carminative and diuretic properties. A distillate from the berries is also used for flavouring or modifying the flavour of whisky, brandy, etc. No experiments seem to have been made in the artificial reproduction of juniper. The Extra Assistant Conservator states that measures on a large scale for artificial reproduction are not practicable for want of sufficient moisture and on financial grounds. In the closed areas the natural regeneration of juniper has not been everywhere successful, chiefly owing to the impoverishment of the soil caused by heavy browsing previous to reservation. In the central Zarghún and Súrghund reserves, where improvement in the soil has taken place, satisfactory regeneration has been noticed. FORESTS.

Pistachio (*Pistacia Khanjak*) P. *wanna* Br. *gwan.*

The pistachio tree comes next to juniper in importance and is found everywhere, at elevations from 3,000 to 8,000 feet, where clay and sandstone are met with. The growth is scattered and sparse, and the tree is extremely slow growing, whence it is difficult to rear. It seldom grows more than 30 to 40 feet in height and is generally lower, with a thick trunk 6 to 8 feet and a rounded crown. Khanjak wood is far superior to that of any other tree growing in the highlands, whence the desirability of its artificial propagation, a subject which will be dealt with later.

The natives recognise two varieties, one which gives fruit and is known as the *bághi*, and the other, which has thicker foliage and does not bear fruit, and is called *ná-bághi*. A tree is believed to begin to bear fruit when 25 to 30 years old and is said to live to a great age. A tree in Khurgi, a Kákozai village about 6 miles from Gulistán, which was known to be about 38 years old, was shown to Mr. Hughes-Buller in 1904. Its height was about 25 feet, largest girth about $2\frac{3}{4}$ feet and $1\frac{3}{4}$ feet at a height of 6 feet from the ground. It had been bearing fruit for seven years. The fruit is green at first, then yellowish and, when ripe about the middle of August, of blackish colour. Good snowfall generally results in a fine harvest. A tree is said ordinarily to yield about 14 seers. The fruit, when unripe, suffers from the west wind, known to the Afgháns as *Barvo*, and also from hail and locusts. It is also affected by a disease known as *gorai*. Hills bearing khanjak are generally owned by small tribal groups. The trees are much valued for their fruit, the right of collection of which is sold. Trees are sometimes given in payment of compensation for blood-money, or in part payment of bride-price. If outside agency is employed by the owners to collect the fruit the produce is equally divided.

The fruit (*shinae*) is eaten both fresh and dry. It is considered warm and stimulating but is constipating. The Kákars believe that, in years when there is plenty of *shinae*, the fertility of their women increases. A powder is made from

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the dried fruit, mixed with wheat or maize flour, and made into a kind of porridge, called *púsa*, which is much relished. Oil for lamps is also extracted from the fruit; this oil is also eaten and used as an unguent for the hair. The value of the gum exuding from the trunk, which is known in the market as mastic (Ver: *mastiki*), has not yet been realized. In Calcutta, mastic from Kábul sells at 3 annas a tola.

In the forest areas, which have been reserved, and in which soil has been formed by the restriction of grazing, appreciable natural reproduction has been noticed. Among the people of the country it is commonly believed that a seed does not germinate, unless it has passed through the stomach of a chikor or the outer cuticle has been removed with the teeth. Experiments made by the Forest department, in 1902 and 1904, indicated that *khanjak* could be successfully reproduced from seed under favourable circumstances. These are (*a*) that the soil should be somewhat rich, (*b*) that the seed should be sown before the spring season, i.e., about February, and (*c*) that moisture should be available in the beds. The process of passing the seed through the stomach of a chikor was found to accelerate germination and indirectly it appears to help its growth. The time required for germination is from 30 to 50 days.

Minor forest products.

Among minor forest products may be mentioned cumin seed and rhubarb. The male asafœtida plant (*hinja*) grows in some parts of the District, especially in Zarghún, but the juice of the stem does not appear to be systematically extracted anywhere, as is done in some other parts of Baluchistán. The gum of the *zhirga* (*Prunus eburnea*) is collected in small quantities by the people and sold at about Rs. 14 a maund. The question of taxing it was discussed in 1899 but was negatived.

Cumin. *Cuminum Cyminum.* (P. *zira*).

This gregarious herb grows wild after good winter rain and snow in the Zarghún, Mári Chak and Hazár Ganji forests and in the hills in Pishín. The herb becomes green in early spring, and about the end of March, the stem appears and is followed by white flowers. The seed or fruit ripens in June, when men, women and children repair to the hills and pull out the plants, which are collected in a heap to dry, after which threshing is done with a stick. As a medicine cumin seeds are considered aromatic, carminative and stimulant. They are also stomachic and astringent and useful in dyspepsia and diarrhœa. The principal use of the seeds is as a spice. The amount annually produced in the Quetta-Pishín District is estimated at about 100 maunds, and the average selling price is about Rs. 10 a maund. During 1899-1900, experiments were made in the cultivation of *zíra* but they almost all proved unsuccessful.

Rhubarb grows in abundance, in years of good rainfall, throughout the Toba hills and the Khwája Amrán, Takatu, Kratu, the Kand mountain, and Rod Mallazai. It is green in April and is fit for use in May. The stalks, which are called *torai* or *nár*, have a sour flavour, and are generally eaten raw, but sometimes jelly is made of them. They sell in the Chaman, Kila Abdulla and the Quetta markets at 1 anna to 3 annas a seer. The plant that grows in the Khwája Amrán range is much valued for its flavour and, when the country was under Afghán rule, a quantity of stems was sent every year by the headmen of the Achakzai tribe as a present to the Governor of Kandahár. The Khán Khéls of Gulistán generally engage a few of the hill Achakzais to erect small stone walls round each plant to protect it from the sun, the protection thus afforded being believed to give a better flavour. FORESTS. Rhubarb. *Rheum emodi*, (P. *pushai*, Pers. *rawásh*).

A vegetable preparation called *aryai*, which is much eaten by the poorer classes, is made of the leaves by putting several layers between hot stones in an oven, which is covered with more stones, when full. After about 12 hours the leaves are removed and dried, after which they are stored for use as required. For this purpose they are pounded and mixed with water or butter milk.

This herb grows in the hills of the Pishín and Chaman Sub-divisions in years of good rainfall. It sprouts in the beginning of April and is gathered about the end of May. The annual produce is estimated at about 100 maunds and it is said to sell at Rs. 5 a maund. The herb is used as a cooling beverage in cases of fever. Hyssop. *Nepeta ciliaris* (*zúfa*).

Since the establishment of the Quetta town considerable attention has been paid to road-side trees and large avenues are now to be seen in places where there was not a single tree in 1878. The most successful trees are the poplar, oriental plane (*chinár*), willow, mulberry, apricot and ash. The latter does particularly well in stony ground which receives only a small amount of moisture. A good deal of damage is done to some species by plant lice and borers.* The trees on the Lytton road and on all roads to the west of it are under the supervision of the Superintendent of Arboriculture; those along the roads and streets to the east of the Lytton road are looked after by the municipal secretary. About 10 acres of land in Woodcock Spinney at Quetta are used as a District nursery. A nursery of 1½ acres for roadside trees is maintained by the Cantonment Committee, in which some 7,000 trees were put down in 1904. The most successful are *chinárs*, apricots, ashes, walnuts, and almonds, etc. Casuarinas were tried but were all Arboriculture.

* Mr. E. P. Stebbing, Forest Entomologist, visited Quetta in 1905 to study the subject.

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killed by the cold in the winter of 1904-05. Experiments are now being made with *ingadubris*, a hedge plant indigenous to the United Provinces, which, it is hoped, will be valuable for garden fences.

In Pishín most of the road-side trees except willows are not doing well owing to scarcity of water. Poplars and willows have been planted along the main roads in Chaman.

MINERALS.

The minerals of commercial value found in the District are coal, chromite and earth salt. The coal bearing part of the Sor range is a curved ridge some twenty miles in length, and the out-crop of a seam of true coal, averaging about 3½ feet in thickness, has been traced along practically the whole of the eastern face of the ridge. The Digári end of the range is in Kalát territory. The seam dips into the hill side at an angle of 35° to 45° from the horizontal. The coal obtained is clean, good looking and dead black, but very soft and crumbly. It burns readily with little ash, but has little heating power. It is worked at two points, the first at a place some three miles from the Hanna end of the ridge where a lessee has taken up a half mile stretch, and the second at mile No. 4 where another lessee has been working since 1897. The lessees are required to pay a surface rent of one rupee per acre on land actually used and royalty at three pies per maund on coal brought into the Quetta town; for coal sold elsewhere the rates of royalty are 8 annas per ton on large coal, 4 annas on small coal and 1 anna on coal dust. Future leases (1905) will be subject to the modified rules issued by the Government of India in 1899.

The output of coal in 1903 was 5,648 tons.

Coal is also found in the Mangat hill, between mile 8 and mile 20 on the Quetta-Kach road; the thickness of the seams, which are very broken, varies from two to three feet. During 1889-90 Khán Bahádur B. D. Patél worked the coal at mile 8 and also between miles 9 and 10, and in 1890-91 at mile 16 and mile 20. The coal was as good as that of the Khost mines, but owing to the contortions and tailing off of the seams they were found difficult to follow, and work was consequently abandoned. During 1905 Mr. Patél again tried to re-open the mines at mile 8 and between miles 9 and 10 but the attempt was abandoned for the reasons already mentioned.

Chromite.

Chrome iron ore was discovered in scattered pockets at a place near Khánozai, about 17 miles from Khánai railway station, on the Pishín Déra Gházi Khán road, in 1902-03, and a mining lease was granted for thirty years to Messrs. Goddard & Co., the Baluchistán Mining Syndicate, about one hundred tons of ore being extracted in that year. During 1903-04 similar leases were granted to Mr. C. R. Lindsay in England and K. B. Burjorjee D. Patél of Quetta. The total output for the year 1903 was 284 tons which were mined by the Balu-

chistán Mining Syndicate, the other concessionaires having only commenced export operations in 1904. The contract for excavation is given by the syndicate to local *maliks*. The ground occupied by it is about a quarter mile square and the syndicate pays, besides a royalty of one rupee per ton, a half-yearly dead rent of Rs. 80 and an annual surface rent of 12 annas per acre annually. Other concessionaires have to pay similar rates. The North-Western Railway has agreed to charge a reduced rate of one-tenth of a pie per maund per mile for the carriage of ore from stations in the Quetta-Pishín District to Karáchi up to the 31st March 1905, and the question of continuing the concession beyond this period is under consideration.

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Salt.

Earth salt is manufactured in the Ségi circle of the Pishín tahsíl, and is known either as *khozha málga* or *tirkha málga*. The *khozha*, or sweet salt, is obtained from the saline tract known as *Málgwánr*, half of which is permanently divided between the *ulus* or followers of *Maliks* Mír Báz and Dádan, the other half being distributed every seventh year among the male members of the *ulus* of Roedád and Abdul Hakím. In August and September parties of manufacturers, who are mostly Kákars living in the neighbouring *khushkába* villages, resort to this tract, settle terms with the landlords, and commence operations. They generally pay one or two rupees per head for the season as rent. Their rights are not transferable. Each party usually consists of five men, one of them being the conductor (*ustád*). Their first business is to collect a sufficient quantity of shrubs for fuel, after which the saline matter (*shangal*) is scraped up and collected. A well is then dug, water being generally obtained at a depth of about 20 feet, and close by a series of three tanks is made, all of which are connected by channels, the first being known as *kadhal*, the second as *mana* and the third as *talai*.

The saline earth (*shangal*) is put into the *kadhal* and water poured on it, after which it is well trodden for 24 hours, more water being added at intervals. The lixiviated fluid flows into the second tank, and eventually reaches the third tank, when it is called *sharbat* and is ready for manufacture. The liquor is then poured into round earthen pans called *katao*, which are placed in parallel rows of five over a kiln (*dokán*), which has a fireplace at one end and a hole for smoke at the other. The pans, which are generally made and burnt by Kákar women, are held together by mud but are not supported from the centre of the kiln.

The kiln is kept burning for about twelve hours at the end of which the residue consists of pure white crystals which are known as *maida* or finest quality. Some of the salt sticks to the pans each time they are filled with the saline fluid and

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heated, and at the end of the season the pans are broken when the solid salt which has adhered to them is scraped off and generally sold to people from Afghánistán. This is known as *ghata málga*. The annual out-put of *Khozha* salt is estimated at about 6,000 maunds.

The manufacturers are very superstitious about their *dokán*. They call it their *satar* or zanana, and will not allow a stranger to come near it. Nor are their women-folk permitted to approach it, as, if they do so, the salt is believed to go bad. The prejudice evidently has its origin in an attempt to keep the industry secret.

Tirkha málga, also known as *kalar*, is collected by a method known as *chadar*, in the bed of the stream of the same name, about 4 miles to the west of the Ségi rest-house. The Chádar stream is about 1½ miles long and the area is owned in equal shares by the Khadézai and Hotézai sections of the Ségis, among the male members of which it is again distributed. They are also the manufacturers. A series of pits, each of which is technically known as a *chádar* or sheet, is dug in the bed of the stream. Each pit is about 11 feet long by 5 feet broad and is dug down to the level of the water, which is usually found at a depth of about 3 feet. Six inches of water are allowed to collect in each pit and kept at that level for a time, after which the saline sediment settling at the bottom is removed and dried in the sun. Collection lasts from July to October and the annual out-put is estimated at about 500 maunds. At the place of manufacture the price of *khozha* salt varies from 24 to 32 seers per rupee, while that of *kalar* is 52 to 64 seers per rupee. Elsewhere the usual method of disposing of the salt is by barter. The rate depends on the seasons, but ordinarily the proportion of *kalar* salt to *juári* or barley is as 2 to 1 and to wheat as 3 to 1, while *khozha* salt is exchanged for *juári* or barley in the proportion of 1 to 2, and for wheat in equal quantities.

Miscellaneous products. Road metal.

Stone for road-metalling in the District can be obtained from the neighbouring hills. In Quetta it is got from the foot of the Murdár hills, but it does not make good metal as it is very friable and crushes into a powder under heavy traffic.

Building stone.

As an experimental measure the Commanding Royal Engineer's house in Quetta, locally known as the *Pakka Kothi*, was built in 1877-79 with stone obtained from a quarry on a spur of Murdár, about 1½ miles above Kási. The experiment, however, proved very costly and has not been tried since. Stone for flooring is obtained from a quarry near Kolepur railway station in the Bólán Pass.

Limestone.

Limestone is obtained from the foot of Murdár and from the beds of dry streams in the vicinity of the cantonment and civil station of Quetta and is burnt in kilns with the aid of coal dust.

[T]he Military Works department has manufactured its own lime [s]ince 1900, the estimated outturn being about 15,000 maunds [a]nnually. The greater part is used in Quetta.

ARTS AND MANUFACTURES.

Embroidery.

Embroidery is common among the Bráhuis of Quetta. It is [h]ighly artistic and of many varieties, but unfortunately the [p]roducts have been much damaged by the introduction of ani[li]ne dyed silks. Of the Bráhui embroideries, that called *mosam* [i]s the best. It consists of very close work in a form of satin [s]titch, the design being primarily geometric. Other kinds which [a]re not quite so fine are known as *paráwéz* and *paríwár*. These [e]mbroideries are generally made in four pieces; a pair of cuffs, [a] breast piece resembling the linen front of a European shirt, [a]nd a long panel forming the pocket.

Another fine kind is the Kandahár embroidery, known as *[k]ámak dozi*, which is generally done by Kandahár and Hazára [w]omen residing in Quetta. The goods turned out are sheets (*[c]hádar*), turbans, waist belts (*kamarbands*), bed sheets, table [cl]oths and veil fronts or *rúbandis*, of English bleached cotton, [th]e borders or corners of which are worked in white silk. The [st]itch most prevalent is a form of double satin. The various [de]signs are known as *bast*, *do-bast*, gnat's hair (*bál-i-pasha*), rose (*[g]ulâb*), poppy (*koknár*), melon seed (*tukhm-i-kharbúza*), and [he]ad in the lover's arms (*sar dar baghal-i-yár*). The design,* [sa]ys Sir George Watt, might almost be viewed as a continuous [el]aboration of the tree of life with intermixed stars and squares [as]sorted as borders. On the margin it is also customary to show [a] narrow strip of torchon lace called *chár bakhia*, in a design [an]d method of production that seems quite original. The best [fo]rm of this lace might be described as resembling a double row [of] wheels linked together.

Padded or quilted embroidery is not uncommon and is made [by] packing soft, loose cotton wool between two layers of cotton [clo]th and quilting the two together. This is supplemented in [we]ll-to-do Afghán houses by embroidery of elaborate design and [wo]rkmanship, the padded or raised portions acting the part of [co]uching. A bronze medal was awarded for a cloak or *chogha* [of] this work at the Delhi Exhibition of 1903.

Another sort of embroidery is gold wire work, which is [chi]efly done by the Kandahári and Pesháwari women in Quetta [an]d by some well-to-do families in Pishín. It is called *zardozi*, [an]d the articles chiefly worked are conical caps (*kulas*), caps (*[to]pis*) and front cuffs and collars for shirts. Coats and waist[coa]ts bearing designs in gold wire are made by Kandahári and [by] a few Punjábi tailors, and are very popular among those who [ca]n afford them. The gold wire used in this industry is said to [be] of German origin and is of poor quality.

* *Indian Art at Delhi*, 1903. Page 404.

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Lace and knitting.

Lace-making and knitting are taught to the pupils of the Lady Sandeman girls' school and the Zanána Missionary school at Quetta, and, in the early days of the former, knitting was also taught to the women who attended the special married class. Before the opening of these classes knitting appears only to have been known to a few Indian ladies who had received their education in Mission schools, but the knowledge has now spread and stockings, caps, and comforters are knitted for home use in considerable numbers.

Carpets and rugs.

Large quantities of Baloch rugs which are made at Adraskhan, a place to the south of Herát in Afghánistán and in eastern Persia are imported through Quetta into various parts of India, several firms being engaged in the business. They also deal in Persian pile carpets and Panjdeh rugs and their prices are generally reasonable. Rugs (*kamballa*) in the *darri* stitch and generally striped, are manufactured by a class of professional weavers known as *péshawar*, who ply their trade from village to village. The wool is cleaned, spun and, if necessary, dyed by the owners and then a *péshawar* is called in who is given his food during the period of his employment and is paid wages by the yard, sometimes in cash and sometimes in kind. The following description of the processes followed is adapted from a memorandum by Mr. B. A. Gupte, Assistant to the Director-General of Ethnography in India.

Weaving rugs in the *darri* stitch.

The wool, which is either of sheep or camels not of goats, is spun by the women and the only implement used is the *charkhae*. It is a spindle of the most primitive type, made of a pair of pieces of wood crossing each other at right angles, with an upright handle fixed at the joint which has a notch in it. A bundle of thread is called *spandakh*. The loom (*kanrae*) is equally primitive, although the work turned out is very clever. It consists of four pegs, fixed in the form of an oblong, the breadth being about 3 feet and the length 9 feet. Between the first two pegs called *mazhwae*, is tied the beam named *sar largae*. Another beam is similarly tied to the pegs at the other end called the *páe-largae*.

Before commencing work, two poles are set upright in a triangle over the warp about 3 feet from the first beam. They are called *bugar*, and are held in position by a rope stretched above the warp and fastened to two pegs beyond it at either end. To the triangular *bugar* is tied a horizontal cross beam called *kasho largae*. To the *kasho largae* are attached, by ropes, two or four curved or triangular sticks (*wázae*) which regulate the action of the heddles. The strings connecting the heddles (*wori*) to the curved sticks on the cross beam, are called *kasho pláo* or *kasho tanrao*. As the weaver goes on weaving the carpet, he has to tie the outer ends or borders to two sticks which are tied together and form a stretcher. They are called

lindai. The stretcher is moved forward as necessity requires. The comb with which the weft is driven home is called *zhamunz.* Armed with this the weaver proceeds by passing each thread of the warp through the heddles in the way he has been carefully trained to do in order to regulate the designs. He has no plan nor can he recount or sing the numbers, as pile-carpet weavers do, and he can produce only a few geometrical designs. The warp is called *uzhda*, when arranged. The weft when laid is called *psor.* It will thus be seen that a distinct name is used for each of the materials used and even the weft thread, before it is passed through the warp or "laid," is distinguished by a separate name (*pot*). The fabric is known as *sargah*, when the designs run both lengthwise and crosswise, and *khatti* or *naqshi* when the design only runs crosswise; plain work is called *sáda.* One end of each of the threads of the warp is tied to the first beam, and the other to that at the farthest end. The heddles are next tied with the *kasho pláo* to the cross beam. In cotton weaving, and even in woollen blanket weaving in other parts of India, sizing is the first process, but in carpet weaving it is not necessary, and no size is used as the outer ends of the "hair" or wool have to be left loose to cover the interstices. The weft thread is carried through the warp thread by the weaver with a shuttle (*skhushtae*) and passed in and out in accordance with the design he carries in his head. It is then pushed home or "laid" with the comb (*zhamunz*). The process is tedious. The *péshawars* generally work in couples, and they finish a *sargah* carpet, 2 yards* × 3 yards, in about a month; a *khatti* or *naqshi* in a fortnight and a *sáda* in three to four days. Blankets for *kizhdis*, and sacking (*ghínd*) are manufactured in much the same way, but the methods used are rougher.

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Felts and *Kosae.*

In pre-British days when cloth of every kind was scarce, felt coats formed the principal article of male attire and this is still the case among some of the poorer classes of Kákars. Felt, or *krásta*, is made of sheep's wool by a simple process. The sheep are first washed and then shorn by the men; all other processes are carried out by the women. After shearing, the wool is well beaten with pomegranate, tamarisk or other sticks, cleaned, and made into parcels of about two seers each. The process of cleaning is called *khpan* in Pashtú and *kaskhaling* in Bráhui. The cleaned wool is then wrapped round a stick, and is called *waranga.* A thin *darri* of the required size is spread, and small pieces of wool are laid by the women over the whole of its surface after which a second layer is added. If a variegated *namda* is to be made, coloured wool is used. Warm water is sprinkled over the layers of wool thus prepared, and

* NOTE.—The yard used is of 42 inches.

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the *darri* is then carefully and securely rolled up, after which it is rubbed and pommelled with vigour. Every half-hour or so a glance is taken to see if the wool has begun to felt, and more warm water is added; after felting, the *namda* is taken out and placed in the sun to dry. This process is continued for three days, more wool being added each time, until the felt is ready for use. Its compactness depends on the rubbing it receives. If a large *namda* is to be made, the women folk from among the neighbours are called in to assist, and they are given food of special quality, including meat, dried whey (*krut*), or milk in which *ghí* has been mixed. The felts are almost all made for home use and there is no trade in them in the District. The women of the Ghilzai nomads, who periodically visit the District, make a superior kind of *namda* which is sometimes offered for sale. These are generally well felted and are occasionally ornamented. Long coats (*kosae*) and short coats (*grátai*) are cut out of the felt and sewn with a large needle and woollen thread. The sleeves are generally closed at the ends, the coat being worn as a cloak with the sleeves depending. Diamond and other patterns are sometimes embroidered upon them.

Copper works.

Brass-vessels are imported from Sind and the Punjab and sold in the Quetta bazar, by weight at Re. 1-8 to Re. 1-10 a seer. There are two shops belonging to Kaláti and seven belonging to Kandahári copper-smiths (*misgar*) in Quetta town, and one owned by a Sindi Hindu; all carry on a brisk trade. The copper is imported from Sind, principally from Sukkur, and various kinds of utensils and pots are manufactured, which are sold by the weight, the price of plain vessels being Re. 1-10 a seer, and of ornamental work Rs. 2 or Rs. 2-4 per seer or more. The principal articles are cooking pots of various sizes (*dég*) jugs with spouts (*gadwa* and *badni*), tinned jugs (*gadwa suféd*), drinking cups with lids (*dáku*), large dishes (*patnús*), wash-hand basins (*chilmchi*), hooka-tops (*chilam*), a large spoon (*kafgír*), dishes (*majma*), plates (*lagan*), basins with strainers (*sáfi*), drinking cups (*katora*), and kettles (*chae-josh*). The vessel which is most in demand, and serves all sorts of purposes is the long necked *gadwa*. It is to be found in almost every household even in the remotest part of the country.

Silver and goldsmiths.

Many goldsmiths are to be found in the Quetta bazar, and one or more, in Pishín, Gulistán, Kila Abdulla and Chaman and in some of the important villages. They turn out some fine work in Quetta, the best being that done by men from the Hazára District of the Punjab. Most of the indigenous population are still content with rough silver ornaments made by Kandahári and Kaláti, and by some Punjábi goldsmiths, but the people nearer Quetta are beginning to use gold ornaments also.

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Leather work.

Mochis from Káthiáwár carry on a considerable trade in boots and shoes, which are chiefly used by people from India residing in Quetta. The leather is obtained from Cawnpore and the articles made locally are cheaper than those imported from England. Shoe-makers from Kalát make country shoes embroidered in silk and gold-wire. A large business is done in new and second-hand ammunition boots, which are very popular with local Afgháns and are also exported to Afghánistán.

A European firm of saddlers and boot-makers established business in 1887 and has since started a branch at Isfahán in Persia. It turns out all kinds of leather articles of good quality. The men first employed were imported from Bombay but they could not stand the severe cold and men from Cawnpore, Meerut and Umballa have since taken their place, under European and Chinese supervision. Attempts, made by the firm at local tanning, proved a failure owing to the climatic conditions.

Dyeing.

Dyers, most of whom are Kandaháris, carry on a lucrative business in Quetta, and there are a few shops in Chaman, Kila Abdulla, Gulistán and Pishín. The principal colouring matter used is indigo, which is imported from Sukkur, and the colours in most demand by Afgháns, are sky blue (*ábi*), black (*siáh*) and green (*zarghún*); but a few well-to-do people also use pansy (*bánjni*), steel colour (*fauládi*), deep catechu brown (*naswári*), nut brown (*kishmishí*), stone drab (*kháki*), olive grey (*shakri*), dove grey (*fákhtai*), yellow (*zard*) and red (*surkh*). Wool and woollen yarn are also dyed in yellow and red for the ornamentation of felts, carpets, etc.

The mordants used are of four kinds, myrobalan, ferrous sulphate, pomegranate and *siáh máya*. The first is prepared by decocting about three-quarters of a seer of powdered myrobalan fruit in 20 seers of water for half an hour. The early part of the process takes place at a high temperature, but a slow fire is used subsequently. This system of boiling is used in the preparation of every kind of mordant. When the decoction turns a dark colour the myrobalan has dissolved and it is ready for use. Ferrous sulphate mordant is prepared in the same way as myrobalan mordant, except that ½ seer of ferrous sulphate suffices for 20 seers of water, and that the cloth is dipped in it only once. Pomegranate mordant is prepared by decocting about a seer of dry powdered pomegranate rinds in about 15 seers of water. *Siáh máya* is made by putting 4 or 5 seers each of (*a*) ferrous sulphate (*spín khaurai*), (*b*) barley flour, (*c*) dried loaves of wheat, in a vat containing water, the mixture being afterwards stirred every morning and evening. Within 9 or 10 days the solution assumes a dark colour, and is fit for use. Fresh ingredients and water are added in equal quantities from time to time.

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The wages for dyeing vary from 6 pies to 2 annas per yard for cloth while the charge for wool is 4 annas to 10 annas per seer.

The first process is the preparation of the colour in vats (*khum*), three or four of which are used and are filled about three-fourths full with 2 seers each of crude carbonate of soda (*sajji*), slaked lime (*ahak*) and molasses (*gur*) or dates. After being stirred every morning and evening for two days, about 15 seers of sediment or leaven (*lae*) are added from another dyer's vat and the mixture, after being stirred every morning and evening for two days, assumes a pale green colour. The liquor, which has hitherto given off a strong acid smell, now becomes sweet (*shírín*). The sediment is now taken out and about a seer each of lime and crude carbonate of soda (*sajji*) are added to the remaining solution, after which 5 seers of indigo are rubbed into a paste which is gradually poured into the vat. The cask is then covered with a board and the contents are stirred with a large stick every morning and evening. Fermentation takes place within three days in summer and six days in winter, when the solution, which is used as a basis for all colours, is ready for use. As fresh supplies of dye are required, the sediment is removed and new ingredients are added. The temperature has to be kept up in winter to prevent damage by frost.

Sky-blue (*ábi*).

For dyeing *ábi* the cloth, which must be white, is first washed in clean water and then immersed in the indigo vat, after which it is rubbed twice or thrice and again allowed to remain in the vat for about 10 minutes. On being taken out it is again rubbed and hung out to dry.

Black (*siáh*).

The cloth is immersed for half an hour in the indigo vat and turned over after every ten minutes when it is taken out of the cask, wrung out and spread. When dry it is twice dipped in black myrobalan mordant and afterwards in ferrous sulphate mordant (*khaurai*). After being dried, it is again dipped in the indigo vat and re-dried. If a still faster colour is required, the cloth, after being stirred in the vat, is dipped in pomegranate mordant and in *siáh máya* twice or thrice, upon which it is wrung out and dried. A durable jet black colour is thus produced.

Dyeing cotton green (*zarghún*).

Two processes are employed to produce green. In the first process, the cloth to be dyed is first stirred for half an hour in the indigo vat, after which it is dipped in a decoction of water with 2 *chittacks* each of turmeric and crude carbonate of soda. The cloth is then washed in clean water, after which it is moistened in a solution made of water and a tola of alum. About half or one tola of diamond green powder, known locally as *jauhar-i-sabz*, an aniline colour to be had for 11 annas a packet, is then dissolved in hot water and the cloth is steeped in it.

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To obtain a faster colour, the cloth after being dipped in the solution of turmeric and carbonate of soda, is steeped in a decoction made by boiling about half a seer of *marwandi* in water for half an hour. *Marwandi* is said to grow in abundance in the deserts round Kandahár. It is afterwards wetted with a solution made from a tola of blue vitriol (*níla thotha*) and water.

Dyeing wool green.

Wool is dyed green by dipping it in a mixture made of 20 seers of water mixed with about 2 *chittacks* of Metanil Yellow* (*Zard Jauhar*), about 3 *chittacks* of diamond green, and about 2 *chittacks* of alum. This mixture is well boiled and suffices for about 5 seers of wool, which must be well stirred in it, and then dried in the shade.

Pansy (bánjni).

To dye a cloth pansy it should first be dyed black, after which it should be dipped in a solution made from a tola of Superior Violet (*jauhar-i-chunia*) dissolved in warm water. Superior Violet is an aniline dye to be had at Re. 1-4 per packet.

Steel colour (fauládi).

The cloth is first coloured *ábi* and then dipped in *siáh máya* solution. It is then dried and put in a solution of Superior Violet aniline dye.

Deep catechu brown (naswári).

Deep brown is produced by first dipping the cloth in myrobalan solution. About 3 tolas of catechu (*kath*) are dissolved in warm water to which is added, drop by drop, a filtrated solution made from 2 tolas of lime dissolved in about half a seer of water and, on the mixture assuming a reddish brown colour, the cloth is stirred in it for about 20 minutes.

Nut brown (kishmishi).

A piece of cloth 20 yards long is dyed nut brown by immersion for five minutes in a decoction made of about half a seer of dry powdered pomegranate rinds which have been boiled in water for about half an hour. After being dried it is dipped in *siáh máya* solution. After a second drying immersion from 3 to 4 minutes takes place in a solution made of a tola of blue vitriol dissolved in warm water.

Stone drab (khdki).

The cloth is dipped twice in the myrobalan solution and dried, after which it is damped in the *siáh máya* solution.

Olive grey (shakri).

The cloth, after being washed in clean water, is dipped in pomegranate solution and then wrung and dipped in *siáh máya* solution. A filtrated solution made of 4 tolas of crude carbonate of soda dissolved in half a seer of water is then gradually added to a hot decoction of *marwandi*, made by boiling the plant for half an hour, after which the cloth is dipped in the mixture for five minutes.

Dove grey (fákhtai).

The cloth is first washed in clean water after which it is dipped in about 4 tolas of green gall-nuts (*mázu*) which have been boiled in water for about 15 minutes. After being wrung, it is dipped in *siáh máya* and dried. It is then moistened with a solution made of a tola of alum dissolved in water.

* An aniline dye, which sells at 10 annas a packet.

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Yellow (*Zard*).

No cotton fabrics but only wool and woollen yarn are dyed yellow. Five seers of wool can be dyed yellow by putting them in a mixture of 4 tolas of Metanil Yellow boiled in 20 seers of water, to which about 2 tolas of alum have been added. After stirring, the wool is allowed to remain in the pot for about 15 to 20 minutes and is afterwards dried in the shade.

Red (*Surkh*).

The cloth is dipped in the solution of myrobalan and dried, after which it is immersed for about 10 or 15 minutes in a mixture made from about a tola each of the aniline dye locally known as *madrási*,* and crude carbonate of soda boiled in water.

Dyeing wool red.

For dyeing 5 seers of wool, 2 tolas of yellow aniline dye are put in 20 seers of water to which is subsequently added an equal quantity of red dye. When these dyes have been dissolved, one tola of alum is added, after which the wool is put in the mixture and stirred for 10 or 15 minutes. It is afterwards dried in the shade.

Calico printing.

Calico printing with wooden stamps is done in Quetta by three Punjábi dyers, who charge rates similar to those already mentioned for dyeing. The colours generally used are aniline dyes.

Crude carbonate of soda (*Khár, ashkhár or sajji*).

The manufacture of carbonate of soda has developed very largely in recent years. The bushes from which it is made are *súrgul* or *guldár* (P.) or *gádagho* (Br.); *parkai* (P.) or (*mati*) (Br.); *zmai* (P.) or *réghat* (Br.) and *nughrai* (P.). *Súrgul* generally grows in soft soil, such as the beds of streams, and is a small bush; *parkai* is somewhat bigger and grows in the hard soil in the western part of the Shorarúd valley, in Ségi and Bora Sháh; it produces a pure white exudation which is sometimes eaten. *Zmai*, which is of two varieties called *tor* and *spín*, and grows on saline soil, covers the eastern part of Shorarúd, from Panjpái to Kuram, and is also found along the western bank of the Karangah Lora and in Ségi, Kulálzai, Popalzai, New Bazar, Old Bazar and Yáru Káréz; *nughrai* grows in abundance in rainy years around Ségi. The *zmai* bush is the largest of all, sometimes covering about 20 feet of ground and growing to a height of about 5 feet. The branches almost all trail towards the ground, while those of the *parkai* are erect. All bushes belong to the proprietors of the soil, and care is taken to see that they are not cut without permission. *Khár* made from *parkai* is considered the best, next to which comes that made from *guldár*, and *spín zmai;* that made from *tor zmai* is of inferior quality, is dark in colour and does not sell well.

In Shorarúd the manufacture is generally carried on by Baréchis from Shoráwak, Nicháris and Sarparas from Kalát,

* Fast colour II.B. sold at Re. 1-2 per packet.

by the Sumáláris, and occasionally by the Mashwánis. Where the manufacturer is not himself the proprietor, he usually pays half of the produce to the landlord as rent. In Quetta, the Randázai Bázais of Zardád Kili sometimes make *khár* themselves and, if they do not do so, take one-sixth of the produce from outsiders. In the Pishín tahsíl only a few of the poorer Ségi Taríns engage in the manufacture, but it is carried on by Kákars and Abdáls who have not hitherto paid, so far as can be ascertained, any share of the produce to the proprietors of the land in which the bushes grow.

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The bushes are ready for manufacture in September and October. The manufacturers work in parties, generally consisting of six or seven but never of less than four men, one of whom is the head or *ustád*. After being cut, the bush is left on the ground for 24 hours, and sometimes for as much as 72 hours, when it is collected close to a pit (*kadhal*). Most of these pits are round and measure some 14 feet in circumference, 4½ feet in diameter and about 1½ feet deep. A fire is lit by the *ustád*, who keeps it gradually supplied with green bushes, at the same time taking care to allow no flame to break out, and is maintained for about six hours. The heat causes the sap to exude from the bushes into the pit, after which the liquid is allowed to cool for two days and forms into carbonate of soda. The out-turn of a pit, such as that described, is generally about 5 maunds at each ignition.

The extent of the manufacture may be gauged from the fact that in 1903, 14,461 maunds of *khár* were exported by rail from Kila Abdulla, Gulistán, Saiyad Hamíd and Yáru Kárêz and 21,560 maunds from Quetta, making the large total of 36,021 maunds, most of which goes to Sind. Of the total output, it is estimated that about 30,000 maunds are produced in the district, the remainder being imported from the Sarawán country. The price in 1904 in Shorarúd was Re. 1-6 per maund of 100 lbs. for *parkai khár*, and about 8 annas per maund in Pishín for *zmai khár*. No duty is levied on its production.

Pottery.

There are no professional potters in the district, and pottery is imported into Quetta from Sind. Among the indigenous population earthenware drinking bowls (*badni*) and cooking-pots (*katao*) are in general use and are made by the women. Among the poorer families the women sometimes make these pots for others, the price of a *badni* being its capacity in grain and that of a *katao* either 4 annas to 8 annas in cash or its capacity in grain.

Attar of roses.

The pink Persian roses, of which most of the hedgerows in Quetta consist, are generally used for the manufacture of rose-water and *attar* of roses. The industry is in the hands of Punjab Khojas and is carried on during April and May.

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For the manufacture of *attar* of roses, a large copper vessel is used as a boiler. This vessel is connected by a bamboo tube covered with cloth with another smaller copper vessel in which is placed about a seer of sandal or sesame oil. This small vessel stands in a wooden tub filled with cold water and a slow fire is used. About 20 seers of rose-petals are put into 10 seers of water in the large boiler and the steam is passed through the bamboo tube into the smaller vessel. The water in the tub is constantly kept cool. The oil which floats on the extract is then removed with the palms of the hands. This is the *attar*. The cost of the operation is approximately as follows :—rose-petals, Rs. 4; firewood, Re. 1; labour, Rs. 3; one seer sandal wood oil, Rs. 4; total, Rs. 12. The oil thus obtained is chiefly exported to the Punjab and sold for about Rs. 80 per seer.

Rose-water.

Rose-water is merely a decoction obtained by putting 4 seers of rose-petals in 15 seers of water and boiling them on a slow fire for about four hours. About 10 seers of rose-water of the commonest kind are thus obtained at a cost of about one anna per seer. The water sells for about 5 annas a seer. A stronger quality is obtained by decocting 4 seers of roses in 6 seers of water. Another quality, called *do-átsha*, is obtained by double decoction.

The stronger qualities are generally used for home consumption. The commoner kind, besides being sold locally, is exported to Shikárpur, Sukkur and Lárkána.

Factory industries.

The Quetta Branch of the Murree Brewery Co., Ltd.

The Quetta branch of the Murree Brewery is situated near Kiráni, about five and a-half miles from Quetta, at the mouth of the Karakhsa hill torrent and on the skirts of the Chiltan Range. The land and water rights were purchased in 1884, and the company pays a sum of Rs. 400 per annum as revenue to Government. Brewing was commenced about the end of February, 1886. Government contracts were first granted in the year 1886, and the trade successes which followed brought about increases to plant and machinery in the year 1888 and subsequent years.

During the opening years of the industry the supply of skilled labour was a source of anxiety to the company, although extravagant wages were compulsory and compensations, which were somewhat costly, had to be made to allay the fears of the pioneer workmen despatched from the Punjab breweries. The outrage in August 1899, when 11 workmen were killed and 9 wounded, proved that the fears of the workmen were far from groundless. The situation of the brewery necessitates special quarters for the workmen surrounded by a high wall with a guarded entrance, a wire entanglement round the premises, connection with Quetta by telephone, the supply of arms and ammunition to the staff and the location of a police guard at the Brewery.

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What may be termed skilled labourers in a brewery have greatly increased during the last few years, and men are now readily obtainable; so that, although wages are high compared with the rates ruling in the Punjab, they are much below those paid on the introduction of the industry into Baluchistán. The skilled workmen comprise Sikhs, Hindus, and Muhammadans from the Punjab. All unskilled workmen are obtainable locally, chiefly from the the village of Kiráni adjoining the Brewery. About 100 workmen are constantly employed, the monthly wages for skilled labour varying from Rs. 20 to Rs. 30, and of unskilled labour from Rs. 12 to Rs. 15.

The manufacture consists of all kinds of ales and stout, and the measure of success may be gauged by the increase in the out-turn from about 86,000 gallons in 1886 to an annual average of 2,24,222 gallons between 1887 and 1902 and to 3,47,220 gallons in 1903. Most of the ale is supplied to the Commissariat; 2,11,851 gallons of the 3,47,220 gallons manufactured in 1903 being sent to that department; but markets have spread to Chaman, Loralai, Fort Sandeman, Sháhrig, Mach, Sibi, Jacobábád, Sukkur, Hyderábád and in a small degree to Karáchi, and they will further increase in due time.

The materials used in the manufactory are wood, coal and patent fuel, which are all procured locally; barley (approximately 9,000 maunds a year) also procured locally; and hops (approximately 250 cwt. a year) which are imported from England, California and Bavaria.

Of the by-products, the brewer's grains, which are recognised as a valuable cattle-food, are in great demand by the local milkmen; the spent hops do not contain sufficient nutrient substances to warrant any other course than disposing of them as fuel; whilst the small quantity of waste yeast available does not justify the expensive process needed for ridding it of the foreign substances, which deteriorate the product, and is not therefore utilised.

Up to the year 1897 no excise duty was levied but, since 1898, it is charged at 1 anna per gallon and the amount realised in 1903-04 was Rs. 18,020. In addition, wholesale and retail licence fees are charged.

St. John Steam Mills.

The St. John Steam Mills, which are the property of K. B. Burjorjee D. Patél, C.I.E., were established in 1887 and named after Colonel Sir Oliver St. John, then Governor-General's Agent in Baluchistán. They have been extended from time to time, and now comprise a flour mill, oil mill, *bhúsa* press, patent fuel plant and block ice machinery. When in full work, the mills employ about 1,000 men, some 36 of whom are skilled hands, engine-drivers, mechanics, foremen, millers, turners and fitters etc., but from October to March the number of workmen is reduced to some 200. About 50 Patháns are employed and

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have been found to be very hard-working, Bráhuis are also employed in feeding the *bhúsa* machines. In April the flour mill, ice machine, patent fuel and oil mills commence to work and continue to do so throughout the summer months. In June there is *bhúsa* pressing which continues for about four months. In winter the flour mill and patent fuel machinery work periodically. Sunday is a half holiday. All the permanent establishment is housed, but others have to find their own quarters. No difficulty has been felt in getting unskilled labour, but some inconvenience has been experienced in obtaining mechanics, as Bombay men, who are the best, object to the climate, and Sind and Punjab men, who do not mind the climate, are not so clever. The pay of mechanics varies from Rs. 25 to Rs. 90.

Wheat for grinding is purchased locally while oil seeds come from Sibi and Kachhi. The flour produced is consumed locally and is also exported to Upper Sind ; the oil is used locally and exported to Kandahár.

Steam flour mill, Chaman.

In 1898 Séth Vírbhándáss, a Sindi merchant, obtained a site at Chaman from Government, free of rent, and established a steam flour mill in June, 1899, in partnership with some other merchants. Government agreed to supply him with water free of rent so long as it was available. A half share in the property was sold for Rs. 11,250 in September, 1900. The mill employs nine men including a *mistri*, and its annual outturn is about 8,400 maunds. Nearly the whole of this is consumed locally, only some 500 maunds are exported across the border.

Generally the grain for milling is purchased by the millowners, but sometimes grinding is done for persons bringing their own corn in which case a charge of 6 annas per maund is made including the cost of cleaning.

Sericulture.

Attention was first called to the prospects of sericulture in Baluchistán by the Financial Member, Sir Edward Law, whilst on a visit to Quetta in 1903. Enquiries were set on foot and meanwhile experiments were initiated by Mr. J. Rogers of the Quetta Brewery. The silk produced was sent to France and Kashmír, and was pronounced by experts to be of the very best quality, and even superior to Italian, French and Kashmír silk. Encouraged by these results, Mr. Rogers commenced sericultural operations on a somewhat more extensive scale, and was granted certain concessions, which included permission to pluck the leaves of trees growing on Government land near Quetta, provided no damage was done to the trees, and a promise that Government would do everything in its power to induce the *zamíndárs* to increase the number of white mulberry trees in the country. Partly owing to the scarcity of trees, and partly owing to the apathy of the cultivators,

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Mr. Rogers experienced difficulty, during 1904, in obtaining enough leaves for his silk worms. In consequence of this quite two-thirds of them died, with the result that the losses on the experiment were largely increased. In spite of these drawbacks, however, over 25 lbs. of excellent silk were produced, most of which was despatched to one of the best markets in France. The prices obtained would have been more favourable if the quantity for sale had been 100 lbs. in weight at least, but they compare extremely well with the prices realized for Kashmír silk. The first quality sold at 38 francs per kilo, net; the second at 30 francs per kilo net; and the tags, of which there were only 6 kilos, at 5 francs per kilo net. The silk produced was reeled in Quetta by Mr. Rogers with machinery imported from the Continent. The reeling was reported to have been well done. At the end of the year Mr. Rogers was obliged to leave Quetta, but arrangements are being made for extending the experiments on a larger and more complete scale by the time a plentiful supply of food for the silk worms is fairly well assured. Meanwhile Political Agents were asked to increase the supply of young mulberry trees, and issue them free of cost to *zamíndárs*, and were also authorised to grant takávi advances for the purpose of enclosing orchards in which young trees had been planted. Mulberry trees have also been planted in the plantations belonging to the Forest department, and in the Shébo Canal Reserve. A printed note giving instructions for mulberry culture, drawn up by Mr. Rogers, has been circulated by the Revenue Commissioner.

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Quetta lay on the direct route from central Asia to Sind through the Bolán pass and was an important halting place in pre-British days, but the trade actually carried on by local merchants appears to have been insignificant. In 1827, Masson only noticed two or three horse *káfilas* from Kandahár passing through it; he remarked, however, that the valley had fine fruits, and was proverbially celebrated for the excellence of its lambs.

Since the British occupation, trade has developed very considerably, and Quetta has become a large distributing centre between the provinces of India on the one hand and Afghánistán and Persia on the other. The trade of the district may, therefore, be divided into three classes each of which will be dealt with separately, namely foreign trade, internal trade and trade with Indian provinces. Trade with Kalát has hitherto been registered as foreign trade at the Mián Ghundi levy post, but it will be unnecessary to deal with it in this place as most of it is likely to be diverted into other channels on the opening of the Quetta-Nushki Railway which passes through the Mastung valley.

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Foreign trade.

The following table exhibits the value of the trade with Afghánistán and Kalát in the year 1903-04 with the principal items of import and export. Trade with Persia by the Seistán route is more important to the Chágai District than in Quetta-Pishín, and the statistics are dealt with in the District Gazetteer of the former. The opening of the Quetta Nushki Railway is, in this case also, likely to divert to Nushki a portion of the Persian trade, which is now carried on from Quetta.

Name of article.	With Afghánistán.	With Kalát.	Total.
	Rs.	Rs.	Rs.
Total Imports and Exports	13,59,903	2,67,501	16,27,404
Imports into the District—			
Total	**6,65,054**	**1,40,931**	8,05,985
Wool	1,17,065	36,380	1,53,445
Fruits, all kinds	3,13,896	17,532	3,31,428
Woollen articles	6,266	3,091	9,357
Ghí	35,611	2,940	38,551
Other articles	1,92,216	80,988	2,73,204
Exports from the District—			
Total	**6,94,849**	**1,26,570**	8,21,419
Piece-goods, Indian	5,36,140	51,040	5,87,180
Do. European ...	1,280	...	1,280
Rice	13,672	10,526	24,198
Sugar	500	13,642	14,142
Tea	6,840	280	7,120
Oil	8,525	3,308	11,833
Wheat and grain	8,910	30,022	38,932
Other articles	1,18,982	17,752	1,36,734

NOTE:—These figures do not include the trade carried partly by rail and partly by road.

Since 1891-92 there has been a considerable diminution in the total trade with Afghánistán. In 1896-97 owing to increased Afghán duties, the trade had fallen to a very low ebb, but since that time it has shown a tendency to expand again, especially in the case of exports to Afghánistán under the head of piece-goods, dyeing materials, and miscellaneous articles. Imports from Afghánistán vary considerably with the character of the agricultural season. *Ghí* may be imported, for instance, in large quantities in one year while, if the rains fail, there will be hardly any trade in it in the next. The only articles which are exported from Afghánistán in increasing quantities, are medicinal drugs. The trade in living animals shows a considerable decrease, whilst that in fruit, both fresh and dry, exhibits a tendency to remain stationary. The fluctuating fiscal policy of Afghánistán, or rather the fluctuating way in which that policy is administered, doubtless accounts for variations in the figures.

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Methods of registration of foreign trade.

Previous to 1891, registration of foreign trade was carried out by a levy *muharrir* at Chaman who noted the number of loads and the live stock that passed to and fro across the border. Rough calculations of the value were afterwards made from these notes. From April 1st, 1891, an improved system was adopted, a *munshi* being appointed at Panjpái and regular registration being begun at Chaman. After the extension of the railway to Chaman, the Kandahár trade continued to be carried across the Khwája Amrán to Kila Abdulla, owing to orders by the Amír prohibiting the use of Chaman except for fresh fruit and a *muharrir* was posted at Kila Abdulla in March, 1892. Subsequently it was found that Panjpái was not a suitable place to register trade from Nushki and Seistán, and registration stations were substituted at Mián Ghundi on the Quetta-Mastung road and at Samungli on the Quetta-Nushki route in April, 1892.

The *muharrirs* at these places now register all foreign land trade, the various articles being valued according to a price list supplied by the Chief Collector of Customs, Karáchi. Weekly returns are submitted by these men (except Chaman whence a monthly return is received) to the Political Agent's office, by which monthly and annual returns are furnished to the Chief Collector of Customs, Karáchi. The trade carried by the railway is registered by the Railway staff. Foreign merchandise coming to the small marts of Gulistán, Pishín or Yáru Káréz escapes registration.

Character of Afghán trade.

The principal articles exported from British India through Quetta previous to 1891 were indigo, iron, rice, cloth, tea, *gur*, oil etc., and the imports from Afghánistán consisted chiefly of fruit, *ata*, wheat, tobacco, wool, *ghí*, madder, asafœtida, raisins, almonds and *postíns*. Live animals included horses,

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sheep and goats. The means of transport chiefly consisted of camels, donkeys, and a few *yábús* or ponies. During the six years preceding 1891, the imports averaged 1,78,665 maunds and the exports 76,012 maunds per annum. The trade in animals may be gauged by the figures for one year, 1890-91, which were 577 horses, 5 donkeys, 5,070 sheep and 1,413 goats. The imports and exports were in each year as follows:—

Years.	Imports (Maunds).	Exports (Maunds).
1885-86	1,15,394	19,134
1886-87	1,12,998	39,826
1887-88	1,31,000	87,000
1888-89	2,68,337	1,37,337
1889-90	2,23,313	78,767
1890-91	2,20,947	94,007
Total (Maunds) ...	10,71,989	4,56,071
Average (Maunds) ...	1,78,665	76,012

The trade would probably have been much larger, but for the heavy imposts levied by the Afghán authorities, and so far back as 1887, the late Colonel Sir Oliver St. John, when officiating as Agent to the Governor-General remarked that the commerce between Afghánistán and Quetta was much hampered by the vexatious restrictions to which it was exposed. In addition to three separate duties levied by three separate sets of officials in Kandahár, every load of merchandise exported was liable to be stopped and re-weighed at Takhta-pul, 25 miles on the south side of the city. The duties were themselves heavy and the export of any article might be arbitrarily forbidden at an hour's notice. He also found that the duties on wheat, *ghí*, and sheep which were Re. 1-6 and Rs. 6-6 per maund, and 14 annas per head, respectively, were practically prohibitive.

The principal articles of import and export have remained much the same as they were in 1886 with the important exceptions that very little madder is now brought from Afghánistán, that a large increase of the imports of liquorice, called *malathi*, (*Glycyrrhizha glabra*) has taken place, and that

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the export of grain, live stock, hides and *ghí* and the import of salt and soap has been entirely prohibited. Almonds, the export of which was a state monopoly up to 1904, may now be imported by private dealers. The import of pistachio (*pista*) is still a state monopoly. The export lists indicate that a preference exists for green tea rather than black, and that the principal cotton goods exported to Afghánistán from the District are the unbleached calico (*márkín*) known as Fattu Wála, priced at Rs. 9 a piece; a second quality known as *márkín doam* price Rs. 7-8 a piece; and *halwáns* or red *sálu* known as Cháku Wála, Panj Muhra and Rabáb Wála the price of which varies from Rs. 8-2 to Rs. 9-4 a piece. The best cloth of this kind is called Ritchi Wála and is made in Manchester by Finlay, Campbell & Co. A piece measures about 50 yards, the width is 31½ inches and the price about Rs. 13-8 a piece.

The embargo placed by the Amír against the use of the Chaman railway station except for fresh fruit, and the consequent diversion of all trade to Kila Abdulla has already been mentioned. The authorised route for merchandise coming from Kandahár to Chaman is by Takhta-pul and Boldak, and heavy duties are levied both on exports and imports. The rates vary on different classes of commodities and it is difficult to obtain reliable information about them, but the following note, compiled in January, 1905, indicates their complicated nature and the disabilities under which trade labours.

Duties on exports to Afghánistán.

Goods exported to Kandahár from India, through Kila Abdulla, are subject to the following payments :—

(*a*) *Sair* or *chilyak*. A duty levied *ad valorem* in Kandahár at the prices current. Piece-goods and leather goods pay 6¼ per cent. and other commodities such as tea, sugar and iron 12½ per cent. Indigo and leather pay 4 annas a seer.

(*b*) *Káfila báshi*. Is paid at the rate of Re. 1 Kábuli or about 8 annas in British currency per donkey load and Rs. 2 Kábuli or Re. 1 per camel load.

(*c*) *Karím chhappar*. This tax, which is now levied at Boldak since the new fort was built, is as follows :—

Piece-goods.	Donkey load.	Camel load.
Sugar, tea and all other goods.	Rs. 2 Kábuli ...	Rs. 4 Kabuli.
Gur and rice	1 Kirán or about 4 annas.	Re. 1 Kábuli, or about 8 annas.

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(*d*) *Daláli*. One per cent. *ad valorem* paid to the *daláls* or agents.

(*e*) *Dah yak*. A further impost at 10 per cent. levied on the total amount of taxes (*a*) to (*d*) above.

(*f*) *Darwáza báni* or *darwázawáni*.

Donkey load	... ...	$4\frac{1}{2}$ pies.
Camel load	... ...	9 „

All these taxes are levied at Kandahár except *Karím chhappar* which is realised at Boldak.

The Amír's agent levies 1 per cent. on goods purchased in Shikárpur, Sukkur or Karáchi, for export to Kandahár. A further impost called *dopaisagi*, levied in the same way as *dah yak* at the rate of 6 pies per rupee has been recently abolished (1905). Goods re-exported from Kandahár pay *rawángi* at $2\frac{1}{2}$ per cent. *ad valorem*, *káfila báshi* at 8 annas per mule or pony load and *dah yak*, or 10 per cent., on the amount of the first two items. If going to Herát, transit dues are levied *en route* and further imposts on entering Herát.

Duties on imports into India.

The following table shows the approximate equivalent, in British Indian currency, of the duties levied at Kandahár on the principal articles, other than wool, carpets and silks, exported from Kandahár to India. All except *árat* are levied in Afghán currency.

[TABLE.

Statement of export duties levied at Kandahár.

Articles.	Value per donkey load in 1905 at Kandahár rates.			Duties Levied. Sair.			Káfila báshí.			Karim chhappar.			Báráua.			Arat.			Serai-dári.			Dalálí.			Remarks.
1	2			3			4			5			6			7			8			9			10
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
1. Kishmish (raisins) ...	21	0	0	...	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	In addition to these duties *dah yak* or one tenth of the aggregate amount of these taxes is also levied on all exports.
2. Káli Kishmish (black raisins)	9	0	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
3. Heráti Unáb	54	0	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	
4. Abjósh (large raisins) ...	18	0	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
5. Badám (almonds) ...	30	0	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
6. Apricots, dry	45	0	0	1	8	0	0	8	0	0	2	0	0	8	0	4	5	0	0	0	9	0	2	3	
7. Lál Kishmish called Artáwí	9	0	0	1	8	0	0	8	0	0	2	0	0	8	0	2	5	0	0	0	9	0	2	3	
8. Kandahári Unáb ...	18	0	0																						
9. Zíra (Cumin seed) ...	36	0	0	1	8	0	0	8	0	0	2	0	0	8	0	6	5	0	0	0	9	0	2	3	
10. Fresh fruit including pomegranates ...	...	...	...	1	0	9	0	8	0	0	2	0	0	8	0	1	0	0	0	0	9	0	2	3	

Notes. (i) The Amír's Agent levies 2 annas on each donkey load and 4 annas on each camel load besides the above taxes on arrival of the goods at Karáchi or Shikárpur.

(ii) The rates for a camel load are double those for a donkey load. A donkey load is reckoned at 3½ standard maunds.

(iii) Apricots were unusually dear in 1905. The value per donkey load in 1904 was Rs. 15.

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Wool is subject to special duties, which are payable on a full (*pakha*) load of 84 Kandahári maunds, equivalent to nine Indian maunds, and are as follows:—

Sair ...	... Rs. 45	Kandahári ...	=	Rs. 13-8-0
Káfila báshi ...	3	Kábuli ...	=	1-8-0
Karím Chhappar	6	" ...	=	3-0-0
Rézash ...	36	" ...	=	18-0-0
Daláli	6	" ...	=	3-0-0
Serai-dári ...	...	... ...	=	0-0-9

To this is added *dah yak* at 10 per cent. on the total amount of the items mentioned above, and the Amír's agent at Karáchi also levies Re. 1 as *daláli* on each *pakha* load.

Carpets and silk cloths are imported from Herát and are generally carried between Herát and Kandahár on mules and *yábús* in parcels of about 4 Indian maunds. The following rates are levied per *yábú* or mule load:—

(*a*) *Rawángi* (levied in Herát)	Rs. 3-2
(*b*) *Jambráni* (levied at Sabzwár)	0-8

As in other cases *dah yak*, or an additional 10 per cent., is levied on the total amount of these imposts. At Farrah and Grishk certain ferry charges have to be paid, and at Grishk all packages are stamped with an official seal. On arrival at Kandahár these goods pay *darwázawáni* at 3 pies, a *chilyak* at $2\frac{1}{2}$ per cent. *ad valorem* and *dah yak* or 10 per cent. on the amount of the first two items. If re-exported from Kandahár towards Baluchistán, the following additional taxes are levied:—

K. (i) *Rawángi* or $2\frac{1}{2}$ per cent. *ad valorem*.

K. (ii) *Káfila báshi* at 8 annas per donkey or Re. 1 per camel load.

(iii) *Karím chhappar* (levied at the Boldak fort) at the rate of Re. 1 per donkey load or Rs. 2 camel load.

K. (iv) *Serai-dári* at 9 pies per donkey load and 1 anna 6 pies per camel load.

K. (v) *Dah yak* or 10 per cent. on the first four items.

(vi) *Daláli* paid in Karáchi or Shikárpur at 1 per cent. on the value of goods sold.

NOTE.—The letter K indicates that the tax is levied at Kandahár.

Postíns, *namdas* or felts, *darris*, etc., when exported from Kandahár to India, pay the following :— COMMERCE AND TRADE.

- K. (*a*) *Rawángi* at 2½ per cent. *ad valorem*.
- K. (*b*) *Káfila báshi* at 8 annas per donkey load.
- K. (*c*) *Serai-dári* at 9 pies per donkey load.
- K. (*d*) *Daláli* at 2 annas 3 pies per donkey load and
- K. (*e*) *Dah yak* at 10 per cent. on the first four charges.

Smuggling.

So many impediments placed in the way of legitimate trade have naturally led to much smuggling and smuggled goods enter the District principally by the Wucha and Tánda Darras to Gulistán; by Shahídán, Shashkáh, Aghbargai and Spéshlún to Kila Abdulla; and by the Lémar, Kratu and Sábúra paths to Pishín and Yáru Káréz. The khásadárs stationed on the Afghán side of the frontier are generally open to arrangement, the conciliatory offerings being appropriately termed *khairána*, the rates of which vary. Occasionally, the Achakzais, especially the Ghaibézai, Shamsozai and Núrzai sections, make their way through the cordon of khásadárs by force, but such attempts are extremely perilous.

Other principal marts for Afghán trade.

A few words may be said about the trade of Afghánistán with each of the places on which it converges, namely Chaman, Kila Abdulla, Gulistán, and Pishín or Yáru Káréz. During the year 1903 the principal imports from Afghánistán into Chaman were :—

Wheat	...	27,287	maunds,	valued at	Rs.	68,217
Ghí	...	3,462	,,	,,	,,	1,38,060
Almonds	...	4,052	,,	,,	,,	81,040
Dried fruit	...	24,310	,,	,,	,,	2,43,100
Fresh fruit	...	4,683	,,	,,	,,	46,830
Wool	...	2,137	,,	,,	,,	43,730

The principal animals employed for transport are camels in the case of wool and pomegranates, and donkeys for fresh and dried fruit; the ordinary rate of hire, which varies, however, with the seasons, between Chaman and Kandahár is from 6 annas 8 pies to 13 annas 4 pies per maund.

Most of the imported commodities except wheat are sent forward by rail, the destination of fresh fruit being chiefly Quetta and that of wool Karáchi. The fresh fruit trade is chiefly in the hands of Kandaháris. Afghán merchants, who have capital, book their own goods to India; others sell to the Sindi traders of Chaman.

Kila Abdulla.

Kila Abdulla surpasses Quetta in its trade in certain commodities, especially wool, dried fruit and piece goods.

NOTE.—The letter K indicates that the tax is levied at Kandahár.

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During 1901-02 the imports from Afghánistán into Kila Abdulla were as follows :—

	Maunds.	Value.
		Rs.
Wool	3,928½	79,370
Ghi	5,510¼	1,61,900
Sheep and goats	3,690 (No.)	19,314
Almonds	4,843	86,280
Malathi (*Glycyrrhiza glabra*) ...	4,325	21,667
Tobacco	309	3,090
Raisins and other dried fruits ...	814	10,145
Horses	56 (No.)	11,300
Cumin seed	28	635
Krut (dried whey)	63	441
Miscellaneous articles ...	...	6,444
	Total Rs.	4,00,586

The exports amounted to Rs. 2,33,332 and comprised the following items :—

	Maunds.	Value.
		Rs.
Iron	1,586	12,588
Sugar	2,999	29,990
Piece-goods	3,117	1,62,840
Salt	669	1,338
Molasses (*gur*)	136	952
Boots and shoes	2,632(pairs)	6,324
Tea	225	14,900
Pepper	20	700
Mules	35 (No.)	3,700

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The principal trader in Kandahár dealing with Kila Abdulla is one Muhammad Naím Khán, Tokhi, whose brother Dost Muhammad Khán is the Amír's trade agent in Karáchi (1904). Other Afghán merchants have forwarding agents or *áhrtis* in Kila Abdulla who clear and store exports until they can be sent to Kandahár, and keep imports until a paying market can be found for them in India. Their fees excluding charges for storage and clearing, vary from 6 pies to 1 anna per package. Goods sold in the Kila Abdulla bazar are principally purchased by the Hindu shopkeepers from Sind. The means of transport employed between Kandahár and Kila Abdulla consists of camels and donkeys. The rates of hire, which vary with the seasons, are from 6 annas 3 pies to 15 annas 6 pies per maund for camel transport; the minimum rate for donkey transport is 10 annas 3 pies a maund.

Gulistán.

The principal articles of import into Gulistán are wool, *ghí*, almonds, and dried fruits, which are chiefly brought by the Achakzais from Rég; the dealers are chiefly Hindu shopkeepers from Sind, but the wool trade is in the hands of Kandaháris. The quantities annually received are about 6,700 maunds of wool, 800 maunds of dried fruit and 2,500 maunds of *ghí*.

Pishín.

The traders from Afghánistán coming to Pishín are principally Násars, Kharots and a few Achakzais; if they cannot sell there advantageously they either go on to Quetta or send their goods by rail to India. Hindu shopkeepers from Shikárpur buy *ghí* and almonds and send them to Quetta, the Punjab and Shikárpur. The chief dealer in wool is Sadu Ram of Thal in the Duki tahsíl of the Loralai District. The dealers in Pishín roughly calculate that the average annual imports are :—

Wool to the value of about	Rs.	1,25,000
Almonds valued at	,,	20,000
Ghí valued at	,,	15,000

The exports consist of—

Piece-goods valued at	,,	50,000
Tea	,,	2,000
Sugar...	,,	10,000
Rice	,,	15,000
Molasses (*gur*)	,,	1,500

Persian trade.

A considerable trade has grown up between Quetta and Seistán and other places in Persia since the opening of the Nushki-Seistán route in 1895-96. As already mentioned, however, this trade is likely to disappear with the opening of the Quetta-Nushki Railway in 1905. The route from Quetta to Nasratábád, the capital of Seistán, is about 472½ miles which can be covered in about 30 marches. The principal imports are silk goods, carpets, *ghí*, wool and asafœtida; and the exports

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are indigo, tea, black and green, rice, sugar, leather and piece-goods. A special *serai* for caravans from Persia has been opened in Quetta, and a Government pensioner has been appointed to afford all facilities and assistance to traders. The goods are either sold direct to traders or consigned to agents who dispose of them in India. The transport animals used on this route are chiefly camels and the ordinary rate of hire to Nasratábád (1905) is about Rs. 25 per camel load of five maunds.

Internal trade.

The railway returns indicate that local trade is almost entirely confined to fresh fruit, wheat and fodder, nearly all of which are sent to Quetta where there is a large demand. During the year 1903-04 2,16,669 maunds of grain and 1,49,229 maunds of *bhúsa* were carried by rail within the District, of which 1,75,256 maunds of grain and 1,39,212 maunds *bhúsa* were brought into Quetta.

Trade with the Indian Provinces.

Mention has already been made of the principal articles coming from Afghánistán and Persia most of which eventually find their way to India by rail. The District itself exports quantities of fresh fruit, grapes, pomegranates, and melons which are sent as far afield as Calcutta and Bombay. Carbonate of soda manufactured in Pishín, and Shorarúd is also exported to Sind, and so is a small quantity of local wool. Except fruit, grain, and fodder, all necessaries are obtained from India, the chief sources of supply being Shikárpur, Karáchi, Bombay and the Punjab, and the principal items of import by rail to the larger stations in the District during 1903-04 consisted of—

	Maunds.
Indian piece-goods	8,397
European „	10,017
Rice	28,296
Sugar	22,923
Tea	3,753
Oil	10,433
Wheat and other grains...	66,447

Collecting and distributing agencies.

The fresh fruit trade is chiefly in the hands of dealers from Kandahár who have shops in Chaman and Quetta. The men buy up most of the fruit received from Kandahár and also take the produce of the local gardens, on lump payments (*ijára*). Besides the principal bazars already mentioned, shops are kept, chiefly by Hindus from the Punjab, in almost all the important villages in the District. A few of these men have direct dealings with firms in India, but most of them buy goods at the large bazars and retail them at their village shops. Grain and *bhúsa* in the villages along the railway are bought by agents for the Commissariat department and other contractors while

eggs and fowls are collected by hawkers, chiefly Punjábis, who go from village to village and bring them by passenger train to Quetta.

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Octroi.

Octroi is levied at Quetta at the rates contained in the Agent to the Governor-General's Notification No. 1807 dated the 24th March 1898. The maximum rate is Rs. 4 per cent. *ad valorem* on sugar, *gur* and *ghí* and the minimum Rs. 1-9 per cent. on cotton piece-goods, metals and their manufactures; most articles pay octroi at the rate of Rs. 3-2 per cent. Similar rates with a few exceptions, are in force in Chaman and Pishín. Octroi is not levied in the Kila Abdulla and Gulistán bazars. The duty is collected in the Quetta town by a special establishment, except in the case of goods received by rail, the duty on which is collected by the Railway staff and paid to the municipality after deduction of a commission of 5 per cent. At Chaman a special establishment is also maintained, while in Pishín the right to collect the octroi is farmed out annually. No duty is levied on articles imported for the use of Government; articles imported for other markets are ordinarily exempt from duty for one week, but those imported into Quetta and Chaman, which are intended for Persia and Kandahár, can be kept without payment of duty up to one month.*

Fees on slaughter cattle.

A contract for slaughter fees is sold annually by auction in Quetta, Chaman and Pishín, the fee charged on each goat or sheep being 1 anna in addition to the octroi. In Quetta a slaughter fee of 4 annas per head is also levied on cattle.

Chaudhris and *Daláls.*

In Quetta town a headman of the bazar, called a *mukhi*, assisted Government officials in former days in various matters but, though the office is still maintained, the holder has now no particular functions to discharge. In each of the other important bazars in the District there is a *chaudhri* who acts as a spokesman for his fellows, assists Government officials in collecting the bazar taxes and in the general management of the bazar, and is ordinarily the custodian of the *panchâit* fund. In return for his services he is generally exempt from payment of bazar taxes on one or more of the shops owned by him. The *panchâit* fund is generally maintained by contributions levied at a certain rate on every rupee paid in the shape of octroi by the Hindu shopkeepers and is expended on charitable purposes. In the Quetta bazar the rate paid by the Sindi traders is 1 anna 6 pies, of which 1 anna 3 pies is devoted to general purposes and 3 pies to the institution known as the Hyderábád *dharam-*

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* The schedule of rates and rules for collection are contained in (*a*) *Memorandum on the Municipal Administration of the Quetta-Pishín District*, 1895 and (*b*) Collection of printed papers regarding the system of levying and collecting octroi in Baluchistán 1902.

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sála, so called because it was built from funds raised chiefly among shopkeepers from Hyderábád, Sind. In Chaman the rate is 1 anna 3 pies per rupee on octroi levied on imports from India, while on goods received from Afghánistán and exported to India the rate is 3 pies per package. In Pishín the rate is 2 annas per rupee on octroi, and in Kila Abdulla, where no octroi is levied, the rates on articles brought into the bazar from India are 3 annas per package on cloth, 6 pies per bag on sugar, and 3 pies on rice etc., and on articles despatched from Kila Abdulla to India 3 pies per tin on *ghí*, 3 pies per bag on almonds, and 6 pies per bag on wool.

There are about 40 *daláls* or brokers in Quetta and 2 or more in each of the other bazars already mentioned except Chaman. Their business mainly consists in arranging sales and purchases for traders, chiefly those from Afghán territory. Brokers' fees are generally paid by both parties to a transaction; the rates are subject to mutual agreement, but those usually prevailing in Quetta are 2 annas 6 pies on every 100 rupees worth of piece goods, charged to both seller and purchaser, 8 annas on every hundred rupees worth of silk, 1 anna per maund on potatoes, onions and tobacco; 2 annas to 4 annas per head on donkeys, and 4 annas per head on bullocks. In Kila Abdulla brokerage is charged at 3 pies per rupee to sellers and at 1 anna 3 pies per maund to buyers of *ghí*, almonds, wool and cumin seed and at 9 pies per maund for grain and fruit. In Gulistán the brokers, who also act as weighmen, charge one *kirán* (half a *Kábuli* rupee, equivalent to about 4 annas) per camel load of *ghí*, wool or dried fruit to the seller, and 9 pies per maund to the buyer; the fee on grain is 3 pies in the rupee and is paid by the seller. In Pishín, the fees charged to sellers are 3 pies per rupee and to buyers 3 pies per maund for grain, 6 pies for dried fruit and 1 anna for *ghí* and wool.

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Railways.

The Sind-Pishín section of the North Western Railway on the standard gauge enters the district on the south-east at Bráhímán or Kach kotal, 112 miles from Sibi, and runs through its centre, in a north-westerly direction from Bostán, to its terminus at New Chaman, 90 miles. This line which was at first known as the Sind-Pishín and Kandahár State Railway, was begun from Ruk in 1880, and the section to Chaman was completed and opened for traffic in 1891. The engineering works of importance and interest are the KHOJAK tunnel through the Khwája Amrán range, which has been described in another place, and the corkscrew at mile 566½ between Kach kotal and Fuller's Camp. A branch line of 21 miles runs to Quetta from Bostán where it meets the Mushkáf-Bolán section, about 13 miles of which lie in the Quetta-Pishín District. The latter was completed and opened for traffic in 1897 and affords

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the shortest route to Quetta from places in India, the distance being 536 miles from Karáchi, 727 miles from Láhore and 851 miles from Delhi. The opening of these railways has resulted in the rapid pacification of the District, and has led in course of time to a reduction in the strength of levy posts and the abolition of all the main District *dák* lines on which postal levies were formerly employed. By contact with their educated co-religionists from India the religious and social observances of the indigenous Muhammadan population have been modified and there is now an appreciable tendency to more advanced views among the leading men in the villages nearer Quetta, exhibited in the effort not to demand any *walwar* or bride price on the re-marriage of widows and in some anxiety to follow the Muhammadan law in cases of inheritance, whereby women become entitled to a share. Another change which has taken place is the introduction of a modified form of Hindustáni, which is freely spoken by those whose business necessitates their frequent visits to Quetta and other places.

Labour from India has easy access to the District and a healthy influence has been exerted on the price of staples. In times of scarcity grain has sometimes been imported into Chaman from places so far afield as Lyallpur in the Punjab, whence it is sent across the border to Kandahár.

Roads.

The District is well provided with excellent roads and paths. Table XI, Vol. B, contains details about all the principal routes, and the dâk bungalows and rest houses are shewn in table XII, Vol. B. The Bolán military road, which is bridged and metalled, enters the District about 5 miles below Sariáb, the distance to Quetta being about 12. The total length of this road from Quetta to Sibi is 103 miles, the intermediate stages being Sariáb Darwáza, Mach, Bíbi Náni, Kirta, Kundaláni and Rindli. The road from Quetta to Chaman which is a continuation of the Bolán road was improved in 1886-87 and was re-aligned, partly metalled and completed between 1891 and 1893. The cost was Rs. 12,200 per mile. It has several branches to principal railway stations, among them being those from Kuchlák to Khánai; from Yáru, Saranán and Sayad Hamíd to Pishín; and from Sayad Hamíd to Gulistán and Kila Abdulla. Gulistán is also connected with Quetta by a road through Ségi, Dínár Káréz and Ghazaband (42½ miles). Forty-eight and three quarter miles of the Pishín-Déra Ghází Khán road between Pishín and Spéra Rágha lie in the District, with a branch from Khánozai to Khánai, 15 miles. A metalled road runs from Quetta to Ziárat through the Sra khulla pass and Kach, 61½ miles, of which 26¾ miles are in the District. There are also 21 miles of the Quetta-Nushki-Seistán route, and 18½ miles of the Quetta-Sariáb-Kalát road. The latter takes off from the Bolán-Quetta road at mile 8. Almost all important places are connected by bridle paths or

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tracks. The annexed table shows the road mileage on the 31st March 1903 :—

Description.	Total.	Maintained from		
		Military funds.	Provincial revenue.	Local funds.
Total Roads and Paths.	**634·44**	**332·81**	**288·13**	**13·50**
Cart roads, bridged and metalled	57·88	43·38	*6·75	7·75
Cart roads, partially bridged and metalled...	347·90	172·22	{ 136·43 *33·50 }	5·75

Transport.

In the Quetta town country carts drawn by two bullocks are chiefly used for transport, but two-wheeled carts drawn by a single mule or pony and hand carts are also utilised. Carts plying for hire in the town are subject to rules promulgated in Agent to the Governor-General's order No. 2237 dated 15th April 1904. Military transport in the shape of mule and bullock carts is also available for hire at low rates. Tumtums and a few four-wheeled carriages also ply for hire and are subject to rules issued under the Hackney Carriage Law of 1889. In the District, the principal animals used for transport are camels which in Shorarúd, Toba and parts of Pishín are also used for ploughing. The total number of camels possessed by permanent inhabitants is estimated at about 2,094 (1904); the principal tribes engaged in the carrying trade being the Ségis in Pishín and Kambráris and Shahwánis in Quetta. A number of camels belonging to Ghilzai nomads are also available. Next to camels come donkeys, which are largely used by nomads in carrying their household effects from place to place on their migrations, and by labourers in carrying building materials such as earth, lime, bricks etc. They numbered 3,241 in 1904. Tumtums and two-wheeled carts drawn by horses are used between Yáru káréz and Pishín bazar.

The question of camel transport has always presented much difficulty and conferences and committees were held in 1884, 1887, 1890, and 1891 to consider the subject and draw up rules. The conference which assembled in September 1891 under the presidency of Mr. (now Sir Hugh) Barnes, the Revenue Commissioner, drew up an elaborate set of rules and a draft agreement the terms of which were approved by the

* In charge of Civil Officers.

Government of India. This conference recommended the division of the whole Agency into two independent circles, the contract in each circle being held by a single contractor. The first circle included the Quetta-Pishín District and the Bolán pass, for which a contract for three years was made ending with the 30th September 1894. The rates of hire for camels required for ordinary tours of British officers and for other miscellaneous requirements varied from 1 rupee and 6 pies per day for one camel engaged for a single day, to 8 annas 6 pies per day per camel when more than three camels were engaged for a period exceeding ten days. When camels were taken by the month, the rate was Rs. 16 per camel. Special maundage rates were fixed for the Commissariat, Public Works department and railway and for telegraph stores. To meet urgent military requirements a reserve of camels was maintained at certain places, grazing fees being paid for these reserve camels, and advances of money being made for them. The contractor had the monopoly of camel carriage, and he was bound to supply carriage to private individuals, traders and others not in the employment of Government. Should any one obtain camels independently of the contractor at rates lower than those fixed by Government *jamadári* at the rate of 4 annas per camel had to be paid to him. On the termination of this contract a conference again assembled in October, 1894, when it was decided that it was no longer necessary to enter into a contract for the supply of camels in the District, and since this time the several departments of the Government have made their own arrangements, the camels required by District officers being obtained through the tahsíldárs. The rates fixed in 1891 are still taken as a guide.

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A new factor has recently been introduced by the recruitment of two camel corps by Government, the 58th Silladár Camel Corps raised in 1901 with its head-quarters at Panjpái in summer and Nushki in winter, and the 81st Ghilzai Camel Corps with its head-quarters at Quetta raised in 1905. Both these corps are employed in carrying work in peace time and offer advantages in the shape of low rates which are fixed, the prompt supply of camels with gear and ropes complete and disciplined *sárwáns*. The rates ordinarily charged (1905) are Rs. 14 per camel, or Rs. 42 per unit of one driver and 3 camels monthly, or 8 annas per camel daily.

If unloaded camels have to be taken to a place outside Quetta half rates are usually charged if good grazing is obtainable *en route*.

Telegraph offices.

The District is well provided with telegraphs, all head-quarter stations being connected by wire. In addition to a Government telegraph office at Quetta, there are offices at all

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Post offices.

stations on the railway and several of the post offices are also combined with telegraph offices. The latter are denoted by the letter C in the statement below.

The following table shows the names of post offices and their functions :—

Serial No.	Name of post office.	Head, sub. or branch office.	M. (Can issue and pay money orders).	S. (Can transact savings bank business).	C. (Combined post and telegraph office).	D. (Departmental office).
1	Quetta town	Head ...	M	S	...	D
2	*Quetta Cantonment.	Town sub-office ...	M	S	...	D
3	Quetta Railway Station	Railway mail service sorting and transiting ...	...	...	...	D
4	Baléli ...	Branch ...	...	...	...	...
5	Kuchlák ...	" ...	...	...	...	...
6	Panjpái ...	" ...	...	...	C	D
7	Pishín ...	Sub. ...	M	S	C	D
8	Bostán ...	Branch ...	M	S	...	D
9	Gulistán ...	" ...	M	S	...	...
10	Kila Abdulla	" ...	M	S	...	...
11	Saranán ...	" ...	M	S	...	...
12	Khushdil Khán ...	" ...	...	...	...	...
13	Chaman ...	Sub. ...	M	S	C	D
14	Shélabágh ...	Branch ...	M	S	...	...

A levy sowár is employed for carrying the mails, twice a week between Sheikh Wásil in the Sarawán country and Panjpái and a similar arrangement exists between Pishín and Khushdil Khán; a footman is employed by the Postal department to carry the bags between the Gulistán railway station and fort and to distribute letters. The offices marked D are

* The Quetta Cantonment office can issue but cannot pay money orders; it also transacts savings bank business, but cannot repay withdrawals without previous reference to the head office.

those wholly managed by the agency of the Postal department; in others the work is done by officials of other departments, mainly Railway and Telegraph employés and school teachers, who receive allowances from the department.

MEANS O[F] COMMUNI[-] CATION.

FAMINE.

Scarcity a[nd] its causes

Owing to the large amount of irrigation and the excellent means of communication, the District is well protected and actual famine has not been known since the British occupation. The sources of irrigation are, however, much affected by rain and snowfall, and in the years of light rainfall their irrigating capacity is largely reduced; a large area of land, moreover, is entirely dependent on the winter rain while flock-owners look to it for their supply of fodder; the pistachio, too, with which many of the people, especially the Achakzais, supplement their means of livelihood, only yields a bumper harvest after a rainy winter. The primary cause of scarcity, therefore, is the failure of the autumn and winter rains, and if such failures continue for two or three years, the scarcity will intensify and even famine may result. Failures of the crops in Sind and the Punjab also affect the prices of staples in the District. Two other causes of agricultural loss, which if combined with other influences may cause scarcity, are the visitations of locusts, and the appearance of *surkhi* or rust in the wheat crop. The latter is generally caused by heavy rain when the ears are in corn, and the south-east wind (*purkho*) blows. Flock-owners not infrequently suffer heavy losses by the mortality among their animals due to severe cold in the winter and spring.

Of the two harvests, the more important is that reaped in spring. It consists principally of wheat and, in the greater part of the District, a good spring harvest, after a winter which has enabled the cultivation of dry crop lands, is sufficient to carry the population through the year. In Toba, however, an entire failure of the maize grown in summer, on which the Achakzais depend for their food supply to a considerable extent, necessitates the import of grain from other parts.

History o[f] periods o[f] scarcity; protective measures.

The first famine, of which local tradition speaks, is said to have occurred in Toba about 1856, when Sardár Muhammad Azam Khán was the governor of Kandahár, both crops having failed and the price of wheat rising to about 2 seers per rupee. Girls are said to have been bartered by the poor for goats. Scarcity was again felt in this area in 1870 when wheat was selling at 9 seers for a rupee.

When the first Afghán War caused a large influx of troops and followers into the country, the prices of food grains rose high: wheat and barley being sold at Rs. 10 and maize at Rs. 8 per maund and *bhúsa* for forage at Rs. 4. Prices also rose abnormally during the second Afghán War, and again at the time of the Panjdeh incident in 1885, and caused considerable suffering among the poorer classes. There was again some dis-

FAMINE.

tress between 1897 and 1903 due to deficient rainfall and to damage done to the crops by locusts; during this period revenue to the amount of Rs. 20,765 was remitted, while Rs. 39,224 were suspended, and advances to the amount of Rs. 19,295 were given to agriculturists for the purchase of seed grain and plough oxen. Relief works costing about Rs. 10,000 were also opened.

As has been already pointed out in the section on Prices, the extension of the railway has had a levelling effect on the retail prices of staple food grains at places in proximity to the line. In July 1885 when the terminus was at Sibi, the price of wheat in Quetta was 6½ seers and in Shikárpur, Sukkur and Multán 14, 17 and 18 seers respectively, but after the extension of the Sind Pishín Railway to Quetta the prices began gradually to assimilate themselves with those of Sind and in 1889 the price of wheat in Quetta was 12¼ seers per rupee whilst in Shikárpur it was 12½ seers, in Sukkur 14 seers, and in Multán 15 seers. The Mushkáf-Bolán Railway was opened in 1897 and in that year the price of wheat in Quetta was 10 seers, and in Shikárpur and Multán 11 seers. It may be assumed, therefore, that the effect of adverse local conditions on the price of the staple food grain will be reduced to a minimum in all years in which a good wheat harvest is assured in Sind and the Punjab.

Most of the permanent inhabitants do not move in time of scarcity; but those who possess only a small quantity of irrigated land, or depend on dry crop cultivation and on their flocks, migrate to more favoured tracts, the graziers sometimes taking advantage of the railway to transport their animals. The Achakzais, for instance, generally migrate towards Kandahár in time of scarcity, but in 1902 they sent a large number of their flocks towards Kachhi. The flocks, however, almost all perished from snow on their way back in the Bolán Pass and Spéra Rágha in March, 1903.

Visitations of locusts.

The District has been visited by locusts on several occasions. Swarms of locusts passed through Quetta and Pishín in May and June, 1891, but damage was only done in Barshor in the Pishín Sub-division, where the wheat crop suffered considerably and a remission of revenue amounting to Rs. 2,329-13-4 was granted. During 1897 the crops in Toba were altogether destroyed by swarms of locusts, and great damage was done in Pishín. The visitation was the more unfortunate, because, but for the damage caused by them, there was every hope of an exceptional harvest on the irrigated lands in Pishín. Owing to the loss they suffered the Usmánzai Achakzais, who cultivated many little gardens and vineyards along the Khwája Amrán range, left the country for Afghánistán almost *en masse*.

In 1901 the District was again attacked by innumerable swarms. The flying locusts first appeared in March and laid eggs

in almost every circle, producing multitudes of crawling locusts early in May. This time, unlike previous occasions, the measures for their destruction which were initiated by Major J. Ramsay, C.I.E., then Political Agent, met with considerable success. The results were thus summarised: "In spite of a sceptical population, persistent efforts were made to destroy the locusts and with considerable success. The main facts that are claimed to have been established are: first that locusts are not invincible except in places where there is practically no population; second that American oilcloth is the essental aid that is required to ensure victory, but that, where running water is intelligently made use of, it should be made an impassable barrier to crawling locusts; third that nothing protected by a wall enclosure need ever be damaged by crawling locusts; fourth, that, in the absence of a wall, a ditch having the inner side perpendicular, makes a very good substitute; fifth, that the labour spent on digging up locusts' eggs is well rewarded." FAMINE.

A full set of instructions for destroying locusts on the lines followed by Major Ramsay has been printed and published by the Revenue Commissioner.

Rust. Damage was done to the crops by rust in 1885, 1888, 1891 and 1896. The most severe attack appears to have taken place in 1888 when 30 inches of rain were received between January and June instead of the usual 5 to 8 inches, and what promised to be a bumper harvest was almost destroyed.

Chapter III.

ADMINISTRATIVE.

Administration and Staff.

Quetta-Pishín is composed of two Districts which are technically distinct—Quetta, which forms part of the Agency Territories; and Pishín which, with Shorarúd and Chaman, is part of British Baluchistán. For purposes of administration, it is divided into three sub-divisions—Quetta including Shorarúd, Pishín, and Chaman. The ordinary head-quarter staff consists of a Political Agent, for areas included in Agency Territories, who is also Deputy Commissioner for areas in British Baluchistán; an Assistant Political Agent and Assistant Commissioner, who is in charge of the Quetta Sub-division; two Extra Assistant Commissioners, one of whom is entrusted with the Judicial work of the Quetta town, while the other holds charge of the Quetta treasury, besides exercising judicial powers; and a Cantonment Magistrate and Assistant Cantonment Magistrate. A District Superintendent of Police, whose head-quarters are at Quetta, is in joint charge of the Police force in the Quetta-Pishín, the Bolán Pass and the Sibi Districts, and for purposes of clothing and discipline, of the small guard in Chágai. A Native Assistant to the Agent to the Governor-General and an Extra Assistant Commissioner hold charge of the Chaman and Pishín Sub-divisions respectively, and have their head-quarters at the stations of the same name. A Munsiff exercises civil jurisdiction in the Quetta tahsíl, and has the powers of a Judge of a Court of Small Causes and of a Magistrate of the second class. In each of the tahsíls of Quetta and Pishín a tahsíldár and a náib tahsíldár are stationed. Their principal duty is the collection of Government revenue, but they also exercise judicial powers. The officers in charge of the sub-divisions supervise the collection of the revenue, occasionally attend in person to *batái* and *tashkhís* work, and, in subordination to the Political Agent, control the tribes within their limits. They also exercise judicial powers. The Native Assistant at Chaman, on the border, keeps himself informed of what is going on across the frontier, in Afghán territory. The subordinate revenue staff consists of muhásibs, kánúngos and patwáris, who are paid servants of Government, and village headmen, known locally as *maliks* or *lambardárs.* The latter help in the collection of revenue, and are ordinarily remunerated by payment of 5 per cent. on the gross collections (*haq-i-malikána*).

One of the kánúngos of the Quetta tahsíl has been temporarily stationed in Shorarúd. The strength of the staff in 1904 is shown below :— ADMINISTRATION AND STAFF.

Tahsíl.	No. of circles.	Kánúngos and Muhásibs.	Patwáris.	Headmen.
Total	20	8	19	352
Quetta	6	3	6	132
Shorarúd	...	...	...	10
Pishín	14	5	13	188
Chaman	...	...	...	22

JUDICIAL. Special Laws.

Between 1877 and 1889 certain Indian Laws were made applicable to the District under the authority of the Government of India. In 1890 the Baluchistán Laws Law and Regulation, the Forest Law and Regulation, and the Civil Justice and Criminal Justice Law and Regulation were enacted for the Agency Territories and British Baluchistán and applied and extended to the District. The last two were modified in 1893 and re-enacted in 1896.

Owing to the special circumstances of the Quetta town as the head-quarter station of the Administration (with a large cantonment and civil station and a bazar containing a large mixed population), it has been found necessary to enact and apply the special laws known as the Quetta Hackney Carriage Law, 1889, and the Quetta Municipal Law, 1896. Similarly, the provisions of some Indian Laws, which are not needed in other parts of the Agency, have been especially applied to parts of the District. They include the application of the whole of the Specific Relief Act and the Negotiable Instruments Act to the Quetta tahsíl, of the Punjab Land Revenue Act, 1887, with certain modifications, to the tahsíls of Quetta and Pishín, and the Cantonments (house accommodation) Act II of 1902 to the Quetta cantonment.

The India Arms Act, 1878, with the exception of certain sections prohibiting the carrying and possession of arms without a licence, was extended and applied to Pishín and Quetta in 1895, and, of the excepted portions, sections 13, 14, and the last 26 words of section 15 have since been extended to certain bazars and military stations. Similarly, the whole of the Public Gambling Act has been extended to these areas.

Legal practitioners are not permitted to practise in the courts generally, but a pleader may appear in a court in any particular case, whether criminal or civil, with the permission

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of the Agent to the Governor-General and Chief Commissioner. Petition-writers are of two grades, and their appointment is regulated by rules issued by the Judicial Commissioner in 1899. On March 31, 1903, there were 15 first grade and 2 second grade petition-writers in the District.

Administration of civil and criminal justice.

The Political Agent and Deputy Commissioner combines the offices of Magistrate of the first class, District Magistrate and Sessions Judge, and is a Justice of the Peace. For purposes of civil justice, he possesses jurisdiction to try original suits without limit as regards value. A decree or order made by him in an original suit of value not exceeding five hundred rupees, and in an appellate suit, the value of which does not exceed one thousand rupees, is final and subject only to revision. In criminal trials no appeal lies in cases in which he passes a sentence of imprisonment for a term not exceeding one year or of fine not exceeding one thousand rupees, or of whipping or of all or any of these punishments combined. The Political Agent is also a Marriage Registrar under the Indian Christian Marriage Act, XV of 1872. The following table shows the subordinate courts, their ordinary powers, and the courts to which appeals lie (1905) :—

[TABLE.

Courts.	Powers in civil suits.	Powers in criminal cases.	Court to which appeal lies.	Remarks.
Assistant Political Agent and Assistant Commissioner, Quetta-Pishín.	Rs. 10,000 ...	First class Magistrate. Summary powers. Justice of the Peace. Sub-divisional Magistrate.	Deputy Commissioner, Pishín.	Notes.— (1) A decree or order made in an original suit of value not exceeding fifty rupees by a tahsíldár or Munsiff, or not exceeding Rs. 100 made by an Assistant Political Agent, Assistant Commissioner, Extra Assistant Commissioner, or Native Assistant is final, but is subject to revision.
Extra Assistant Commissioner, Quetta.	Rs. 10,000. Judge, Court of Small Causes up to Rs. 500.	First class Magistrate. Summary powers. Justice of the Peace.	Political Agent, Quetta.	
Extra Assistant Commissioner, Treasury Officer and Senior Munsiff.	Rs. 1,000. Judge, Court of Small Causes up to Rs. 500.	Second class Magistrate.	Deputy Commissioner and Political Agent, Quetta; revision to High Court.	(2) Mr. Smith, the present Treasury Officer of Quetta (1904), is a Magistrate of the first class and also has summary powers.
Cantonment Magistrate, Quetta, vested with the powers of Assistant Political Agent.	Rs. 10,000. Judge, Court of Small Causes up to Rs. 500.	First class Magistrate. Justice of the Peace. Summary powers.	Do. do.	(3) No appeal lies in a criminal case in which a Magistrate of the first class passes a sentence of imprisonment for a term not exceeding six months only, or of fine not exceeding five hundred rupees only, or of whipping only.
Assistant Cantonment Magistrate, Quetta.	Small Cause Court up to Rs. 50.	Second class Magistrate.	Political Agent, Quetta.	

SUBORDINATE COURTS AND THEIR POWERS.—(*continued*).

Courts.	Powers in civil suits.	Powers in criminal cases.	Court to which appeal lies.	Remarks.
Munsiff, Quetta.	Rs. 300. Judge, Court of Small Causes up to Rs. 100.	Second class Magistrate.	Revision to High Court.	
Extra Assistant Commissioner, Pishín.	Rs. 10,000.	First class Magistrate with summary powers; Sub-divisional Magistrate. Appeals from third and second class Magistrates, Pishín and from náib tahsíldár, and tahsíldár of Pishín.	Deputy Commissioner, Pishín.	(4) The Assistant Political Agent, and the Extra Assistant Commissioners, Quetta and Pishín, have powers to hear appeals from the orders of the third and second class Magistrates and from náib tahsíldárs and tahsíldárs, but these powers are at present exercised by the Political Agent and District Magistrate himself (1904).
Native Assistant, Chaman.	Rs. 300	Second class Magistrate.	Do. do.	
Tahsíldár, Quetta.	Rs 300	Do. do.	Political Agent, Quetta.	
Tahsíldár, Pishín.	Do.	Do. do.	Do. do.	
Náib Tahsíldár, Quetta.	Up to Rs. 50.	Third class Magistrate.	Do. do.	
Náib Tahsíldár, Pishín.	Do. ...	Do. do.	Do. do.	

Besides the courts named, there are (1904) four Honorary Magistrates in the town of Quetta, two of whom exercise first class and two third class magisterial powers. They are under the general control of the Magistrate of the District, and are generally entrusted with the disposal of petty cases under the Police Act, Local Laws and cases of ordinary assault, etc., between Indians. One of them, Khán Bahádur B. D. Patél, works throughout the year, and the others work by turns. Khán Bahádur Ghulám Haidar Khán, Achakzai, exercises third class magisterial powers in Toba but is given little magisterial work. JUDICIA

Civil justi

Table XIII, Vol. B., gives details of civil suits disposed of by various courts in the District. In the quinquennial period 1893-94 to 1897-98, the average annual number decided was 7,006, of which 4,195 were original, 105 appellate, and 2,706 cases for execution of decree; during the quinquennial period ending with March 31, 1903 the annual average fell to 5,286, of which 3,039 were original, 59 appellate and 2,188 cases for execution of decree. During the year 1902, the total number of original suits instituted in the courts was 2,822,* and their aggregate value was Rs. 2,29,558, or an average of about Rs. 81 per case. The number of cases, the value in which exceeded Rs. 500, was 75 only, or 2·6 per cent. of the total, while the number of those of which the value was under Rs. 100 was 2,386, or 84·5 per cent. of the total. The majority of these civil suits occur in the town and cantonment of Quetta and other bazars, most of the parties being people from India, who are in Government employment or engaged in trade and labour. Of the 2,822 cases decided in 1902, 2,631, or about 93 per cent., were suits for money or moveable property; the remainder consisted of suits relating to rent, immoveable property, specific relief, the right of pre-emption, mortgage, miscellaneous and matrimonial claims. The number of the last named cases was 37. An impetus has been given to litigation regarding immoveable property by the extension of the Quetta town and the consequent great increase in the value of land, which has trebled within the last three years (1904).

The number of cases in which appeals were preferred was very small, due to the restrictions on this class of cases contained in the Civil Justice Law, to which reference has already been made.

The general decrease of suits in the two quinquennial periods may be ascribed to the cessation of large works on the railways and elsewhere, which attracted a large alien population and gave rise to petty suits about debt, wages, and advances

* These figures are for the calendar year, while those given in the table are for the financial year.

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made for works. The indigenous population, especially the people who are distant from the courts, generally settle their cases among themselves through the mediation of their headmen. Cases among them affecting marriage, compensation, and land and water, which come before the authorities and can be settled by tribal or local custom, are generally referred to *jirgas*, and will be discussed below. Appeals and applications for revision in civil cases are filed in complicated cases or where the subject matter in dispute is of any but a trifling nature. An order, issued in 1900, impressing on subordinate courts the advantages of disposing of cases by means of arbitrators selected by the parties themselves, has worked satisfactorily and tended to keep down the number of appeals. The results of appeals and applications for revision to the District Judge between 1901 and 1903 are given below:—

	Civil appeals upheld.	Amended.	Remanded.	Rejected.
1901	16	1	...	34
1902	6	1	7	35
1903	15	2	...	24

Applications for execution of decree are generally dealt with promptly and seldom prove infructuous, except in cases when judgment debtors abscond, leaving no property.

Criminal justice.

Details of criminal cases disposed of during the decennial period ending with March 31, 1903 will be found in table XIV, Vol. B. The annual average during the quinquennial period, 1893-94 to 1897-98, was 2,749, of which 2,708 were original and 41 appellate. In the second quinquennial period the annual average rose to 3,329, of which 56 were appellate and 3,273 original. The petty nature of the crime thus dealt with is indicated by the fact that 98 per cent. of the average number of original cases disposed of in the second quinquennial period were decided by courts subordinate to the District court, and that those dealt with by the Cantonment Magistrate, Quetta, and the Honorary Magistrates formed 37·3 and 34·9 per cent. of the total respectively. During the calendar year 1902, the number of criminal cases brought to trial was 2,438, of which 2,196, or about 90 per cent., were petty cases punishable under Local and Special laws. Only about one-fourth to one-fifth of the total number of criminal cases are instituted without the intervention of the police and taken up directly by Magistrates,

and the percentage of convictions in such cases is about 30. Most of them are cases of hurt, intimidation, insult or annoyance, and are compounded. The annual average number of appeals is about 38, the majority of which are rejected. Persons ordered to furnish security numbered 169 in 1901 and 91 in 1902. The cognizable crime of the District is discussed in another section. JUDICIAL.

Jirga cases.

The system of the disposal of disputes of all sorts by the elders of villages or tribes is indigenous to the country; the procedure is simple and has many advantages. It has been regularised from time to time by certain special regulations, the latest being the Frontier Crimes Regulation (III) of 1901, which has been applied and extended to the Agency Territories and British Baluchistán with certain modifications. The system possesses special advantages when worked in conjunction with the Levy system, under which crime in the areas outside the towns is investigated by the headmen and levies. At the same time it requires continuous supervision by the District Officers to prevent abuses arising from ignorance and partiality.

Ordinary cases are referred to a council of elders of not less than three members selected from among the headmen of villages and leading men of tribes, while those which involve any question of principle, or affect two or more important tribes or two Districts, are generally referred to the *sháhi jirgas*, which assemble at Quetta in the autumn and at Sibi in the winter. It is the function of the *jirga* to come to a finding of fact on the issues placed before them, and its award is then submitted to the Political Agent and Deputy Commissioner, with whom alone lies the power of passing final orders in the case, and of determining and awarding punishment under the Regulation. Ordinarily, the Political Agent may sentence an offender to seven years' rigorous imprisonment; a sentence exceeding this term, up to a maximum of 14 years, must be confirmed by the Agent to the Governor-General and Chief-Commissioner, to whom also appeals lie in certain cases.

The annual average number of cases decided in the two quinquennial periods, from 1893 to 1898, and from 1898 to 1903, was 133 and 129 respectively; the numbers referred to the *sháhi jirgas* being 14 and 23 and to local *jirgas* 119 and 106. Of the 129 cases disposed of annually during the second quinquennium, 9 were of murder and robbery, 9 of adultery, 9 of cattle-lifting, 25 of land and revenue, 13 of betrothal and marriage, while 64 were miscellaneous. Details are given in District Table XV, Vol. B.

Major Archer, the Political Agent (1905), writes regarding the cases which are generally referred to *jirgas* in the District :—

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Local and Sháhi Jirgas.

"In the Chaman Sub-division, all cases between the people of the country are referred to local *jirgas*. In the Pishín and Quetta Sub-divisions all cases relating to inheritance, murder when it is the direct result of a tribal feud or an old-standing enmity between the two parties, matrimony, betrothal, bride-price (*walwar*), and riot, if caused by a dispute regarding land or some other monetary transaction, are referred to *jirgas*. All kinds of civil and criminal cases are also referred to local *jirgas*, whenever local investigation satisfies the Political Agent that the ends of justice will better be served by a reference to a council of elders, which can bring to bear on the question at issue its personal information of the customs and usages of the parties concerned in the case.

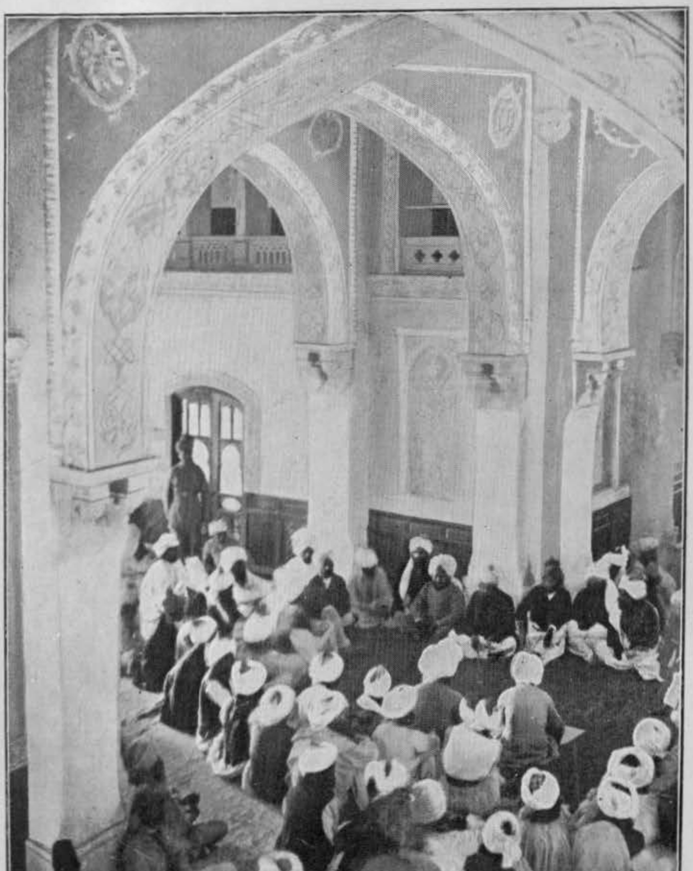
"As a general rule, no cases are referred to the *sháhi jirga* from the Chaman Sub-division. Only one case of murder, in which several influential men were implicated, has been referred to such a *jirga* since the British occupation, as the position of the parties rendered it difficult for a council of elders composed of local men to give an impartial decision.

"From the Pishín Sub-division, cases in which the parties belong to the Pishín and Zhob Districts, and in which joint *jirgas* fail to give unanimous findings, or cases between two large tribes, when factions arise and an impartial finding from a local council of elders is considered dubious, or when the question at issue involves important points of tribal custom, are referred to the *sháhi jirgas*.

"In the Quetta Sub-division those cases, whether civil or criminal, in which the local *jirgas* fail to arrive at a unanimous finding or the point at issue involves important questions of tribal custom, are referred to the *sháhi jirgas*.

System of selection of members.

"Efforts are generally made in cases of a civil nature and in the less important criminal cases, which frequently arise out of civil claims, to persuade the parties to nominate their own members to sit on the local *jirgas*, and if they do so, which they very often do, cases are referred to their nominees. In case the parties refuse to nominate, leading men of the tribes concerned are selected to sit on the *jirga*, with a due admixture of representatives of other tribes. In selecting the members of a council of elders, great care is taken that no person who is biassed in favour of one or the other party is chosen. A register of the important and leading men of each tribe eligible for *jirga* work with due regard to their position and intelligence is maintained in the Political Agent's office, from which members are generally selected; and very often, in the less important cases, the Sub-divisional Officers are authorised to nominate members on behalf of the Political Agent. After consultation with the Sub-divisional officers and with due regard to the nature of the cases to be referred to the *sháhi jirga*, principal



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men of different tribes are selected every year to sit on the *sháhi jirga.*

Classes resorting to jirgas and the most prevalent kinds of cases.

"People of all classes, outside the litigious atmosphere of the people of India, resort to *jirgas*, but there is a tendency among the inhabitants of villages in the vicinity of Quetta to have recourse more and more to the regular courts. In the Quetta Sub-division the crimes of adultery, murder or cattle-lifting are uncommon. Among the Kákars of the tahsíl a case of adultery occurs now and then. In the Pishín Sub-division, especially in the parts inhabited by the Taríns and by the Kákars bordering on Hindubágh, adultery is too common a vice, and frequent cases come to light. The reason for adultery among the Taríns is that the greater portion of the male population is usually away in the Deccan for trade, and in the majority of cases they stay away from their homes for years. Among Kákars, in many cases, girls are kept unmarried in their parents' homes up to middle age and others are mated with people of advanced age or those already possessing wives. At the root of this evil is the institution of bride-price (*walwar*) and the custom that the widow of a deceased relative is the property of his heir. The parents and guardians, in expectation of a higher bidder, keep their daughters unmarried and, when they find a person who is possessed of means to gratify their desire of money, they give the girl in marriage without any regard for incompatibility of age, etc. The crimes of murder and cattle-lifting are not very common in Pishín. When they do happen, they are generally among Kákozai Achakzais and Kákars. The killing of women on account of misconduct, real or alleged, is not uncommon; while thefts of cattle and other property by marauders from across the border are fairly frequent. Among the Achakzai tribes, inhabiting the Chaman Sub-division, the crime of adultery is very little known, but of all tribes in this District, they have the greatest thieving propensities and possess the most inflammable tempers, which lead them to resort to murder and blood-shed on small provocation. However, since the occupation by the British Government, they are gradually becoming somewhat more amenable to law.

Acceptance of findings by parties.

"In the Chaman Sub-division, where the members of local *jirgas* are generally nominated by the parties themselves, or are the headmen of the people concerned in the case, the awards are generally accepted by the parties. The headmen are always encouraged to compromise the matter in dispute on tribal lines and this system, if intelligently followed, lessens the chances of the recurrence of a quarrel or dispute.

"Taríns and Saiads constitute the bulk of the population of the Pishín tahsil, and, owing to the contact with Indian people, their knowledge of law and law courts is generally better than that of their neighbours, and they are often disinclined to

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accept any award which does not give them all they want. As, however, efforts are always made to cause the parties to select their own nominees as members of the *jirga*, they very often find little excuse to disagree with the findings. In cases in which the parties do not agree to the award, and there are reasons to suppose that justice has not been done, the cases are remanded for reconsideration to the same or a second *jirga*.

Appeals and general results of system.

"In the Chaman Sub-division there is hardly ever an appeal against a decision based on a finding of a council of elders, the reason being that the decisions are nearly always in the nature of a compromise. There are now and then appeals against decisions of *jirgas* in Pishín and Quetta, but the orders have only been reversed in very rare cases. On the whole, it may be said that the *jirga* system, as worked in this District, retains many of its advantages, its principles and procedure being still better suited to the ideas and habits of the majority of the people of the country than those of the less elastic Indian codes. But it seems probable that its usefulness and popularity will tend to diminish, as time goes on, from two causes:—

(1) The essence of the *jirga* system is compromise, and, as the people become affected by western ideas of strict legality, they are less disposed to accept compromises and more inclined to stand to the strict letter of what they think their rights;

(2) As wealth increases and tribal ties relax, the temptations to partiality and venality in the members of these councils increase, and it is likely to become more and more difficult to select *jirgas* who are quite trustworthy."

Fanatical outrages.

Fanatical attacks, on Europeans especially and also on non-Muhammadans, are common throughout the frontier, and in the early days of Quetta cases of the kind were unpleasantly frequent. Among them may be mentioned the murders of Lieutenant Hewson in 1877, to which reference will be found in the article on Quetta town and cantonment, and of Lieutenant Dupuis at Urak in 1884, which has been described in the Miniature Gazetteer article on HANNA. Closer acquaintance with British methods, however, the general pacification of the country, the enforcement of village and tribal responsibility, and the presence of strong bodies of troops and police have resulted in a large diminution of this form of crime, with the result that during the decade from 1893 to 1903, only one such case occurred in the District. This was one in which a man named Mohanda, a Kúrd and a Kalát subject, rushed with a sword on a company of Artillery which was marching on the Sariáb road in July 1901. The man was disabled before he had succeeded in doing any damage.

Fanatical cases are dealt with under the Murderous Out-

ages Regulation IV of 1901. Among its more important provisions may be mentioned the power which it gives to the Sessions Judge or Deputy Commissioner of the District or to any Magistrate of the first class specially empowered by the Local Government, or by the Sessions Judge or Deputy Commissioner, after the commission of an offence, to try a fanatic, to pass orders as to the disposal of the offender's body, and to forfeit all his property to Government. No appeal lies from any order made or sentence passed under the Regulation, and the court may, on the recommendation of a council of elders or after such enquiry as it may think necessary, take measures against any community or individual with whom a fanatic is or has been associated in circumstances which satisfy it that, by reasonable prudence or diligence on the part of the community or individual, the commission or attempted commission of the offence might have been prevented. Such measures include fine and forfeiture of revenue-free grants, remissions and allowances.

JUDICIAL.

Registration.

The Indian Registration Act, III of 1877, is in force in the District. The Political Agent and Deputy Commissioner is the Registrar; the Native Assistant Chaman and the tahsíldárs of Pishín and Quetta are Sub-Registrars within their respective sub-districts, while the Cantonment Magistrate of Quetta and the Treasury Officer, Quetta, are Sub-Registrars respectively for the Quetta cantonment and the civil town. The people of Chaman and Shorarúd are still ignorant of the advantages of registration, and most of the transactions in these places, which ought strictly to be registered, are made either by verbal agreement or by deed which the village *mullá* is requisitioned to draw up. In Quetta the population fully appreciates the advantages afforded by registration, as do also the people of Pishín, many of whom trade in India. Table XVI., Vol. B, shows in detail the number of documents registered, the revenue realised, and the expenditure incurred in connection with registration during each of the ten years 1893-94 to 1902-03. The average number of documents registered each year, during the nine years ending with 1901-02, was 314 compulsory and 94 optional, of which 7 related to immoveable property. The average total realizations, including copying fees, amounted during the same period to Rs. 1,174 and the expenditure to Rs. 329. The number of offices averaged 5. In 1902-03, the total number of offices was 6; and the documents registered numbered 727, of which 620 were compulsory and 107 optional, the latter including 26 relating to immoveable property. The income amounted to Rs. 2,157, and the expenditure to Rs. 837.

Details of the documents relating to the mortgage and sale of immoveable property, which were registered in Quetta and

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Pishín in the year 1902-03, show that, excluding transactions between non-agriculturists, 140 mortgages out of a total of 160 mortgages, and 190 sales out of an aggregate of 281 sales, took place between cultivators themselves, while 80 sales of property valued at Rs. 3,14,766 were in favour of Government and represented the land bought for the extension of the Quetta cantonment. The number of sales and mortgages to non-agriculturists numbered 20 and 51 respectively, most of the latter being transactions relating to petty building sites bought by Indians who are now settling in Quetta. Their total value was Rs. 46,942.

In the District, cultivators frequently get transfers of land registered in the Mutation Registers, which are maintained by the patwáris under the Land Revenue Act, and attested by the Revenue officer, and such an entry is considered by them to be sufficient for all practical purposes, the further trouble and expense of registration being dispensed with.

FINANCE.
Historical.

To explain fully the financial history of the District it is necessary to deal separately with each of the two principal sub-divisions. It was not until 1897 that the consolidated revenues of the whole administrative area of Quetta-Pishín were treated on a single basis.

Quetta.

After the occupation of Quetta in 1876, the Khán of Kalát proposed that the revenues should be collected by British officers and paid to him in a lump sum, and in accordance with this proposal, during the years 1877-78 and 1878-79, the revenue was collected under the orders of the Agent to the Governor-General. It amounted in the first year to Rs. 13,138 and to Rs. 33,621 in the second year, and after paying the charges for collection, which were Rs. 5,057, the surplus Rs. 41,702 was paid to His Highness.

In April 1879, the Government of India accepted the administration of the Quetta *niábat* for a period of five years, with the option of continuing to administer the country at the end of that time on such terms as might then be settled. The arrangement lasted for four years, during which the revenue amounted to Rs. 2,39,290, and, after paying the cost of administration, the surplus during the first three years was paid to the Khán. During the fourth year, 1882-83, a lump payment of Rs. 25,000 was made, and, by an agreement dated June 8, 1883, the Khán made over to the British Government, with effect from the 1st April 1883, the Quetta District and *niábat* absolutely on a perpetual rent of Rs. 25,000 per annum, to be paid on March 31 in every year. Henceforth all transactions were brought into the regular accounts of Government under the head of the "Quetta Assigned Revenues," the surplus, after paying certain charges, being devoted to the improvement of the District. The receipts

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included the revenue from all sources, except that of the Quetta municipal fund, and the expenditure covered the quit-rent of the *niábat*, the salary of the Political Agent in Quetta and Pishín at Rs. 1,000 per mensem, with his establishment and his travelling and other allowances, and all legitimate charges for administration. It was subsequently decided that the pay of the Political Agent's Office establishment should be debited to Imperial Revenues. The revenue of Pishín was not at this time included in the Quetta Assigned Revenues but was treated as Imperial. Statistics of the revenue and expenditure of Quetta for the year 1883-84 are not forthcoming, but the revenue and expenditure of the four following years were as under:—

		Revenue.		Expenditure.
1884-85	...	Rs. 93,625	...	Rs. 64,328.
1885-86	...	„ 1,01,225	...	„ 1,08,428.
1886-87	...	„ 1,35,192	...	„ 1,11,666.
1887-88	...	„ 1,72,421	...	„ 1,25,021.

It will be noticed that the revenue showed very healthy signs of expansion.

In April 1888, on the recommendation of the late Colonel Sir Oliver St. John, the readjustment of certain charges between the Quetta Assigned Revenues and Imperial Revenues was sanctioned, and during the three following years the revenue and expenditure were as follows:—

		Revenue.		Expenditure.
1888-89	...	Rs. 1,65,502	...	Rs. 1,50,407.
1889-90	...	„ 1,61,191	...	„ 1,93,703.
1890-91	...	„ 1,92,869	...	„ 1,78,111.

Meanwhile the Province had been expanding very rapidly, and from April 1, 1890, the expenditure on the whole of the police and levies employed in Baluchistán, including those of the Quetta-Pishín District, was provincialised for a period of two years, and a special assignment was made from Imperial funds. In November of the same year, the Government of India agreed to make over to the Agent to the Governor-General for a period of two years from April 1, 1891, all the revenue of the "Quetta District" under certain heads, and a *quasi*-Provincial settlement was made, under which the Agent to the Governor-General was invested with the financial powers usually exercised by a Local Government. The share of the charges which had been previously ordered to be debited against the "Quetta Assigned Revenues," remained unaltered. Henceforward the revenue and expenditure of "Quetta" were classified in the same way as those of an ordinary British Indian District.

FINANCE.

The revenue and expenditure during the two years of the contract were as under:—

	Revenue.		Expenditure.
1891-92	... Rs. 1,92,969	...	Rs. 1,74,749.
1892-93	... „ 2,54,631	...	„ 1,83,643.

In November 1892, the Quetta Assigned Revenues were included among the four *quasi*-Provincial contracts, the continuance of which was sanctioned by the Government of India from April 1893. The others were the Zhob revenues, the Zhob Levy Corps, and the expenditure on police and levies. The revenue of Quetta was as follows:—

1893-94	... Rs.	2,32,049.
1894-95	... „	2,57,437.
1895-96	... „	2,28,572.
1896-97	... „	2,23,214.

Pishín and Shorarúd.

A much less chequered career attended the revenue and expenditure of Pishín and Shorarúd which were assigned to the British Government by the treaty of Gandamak (1879). Up to March 31, 1897, both were classed as Imperial and included in the general accounts. The revenue in each year was as under:—

	Rs.			Rs.
1878-79	... 46,542	...	1879-80	... 68,735.
1880-81	... 61,096	...	1881-82	... 52,803.
1882-83	... 52,806	...	1883-84	... 44,730.
1884-85	... 92,579	...	1885-86	... 62,267.
1886-87	... 70,874	...	1887-88	... 68,151.
1888-89	... 87,883	...	1889-90	... 1,07,346.
1890-91	... 1,30,855	...	1891-92	... 1,08,406.
1892-93	... 1,09,916	...	1893-94	... 1,27,329.
1894-95	... 94,519	...	1895-96	... 98,250.
1896-97	... 1,04,197			

Chaman.

In the Chaman Sub-division, the question of levying land revenue had arisen in 1892, and a lump sum of Rs. 6,600 was paid in 1895 96. In 1896-97, a lump assessment of Rs. 8,000 was sanctioned, but the revenue from all sources amounted in that year to Rs. 7,607. The revenue realised in Chaman from other sources is included with Pishín, and separate figures are not available.

Recapitulation.

In 1896-97 the aggregate revenue of the District amounted to about Rs. 3,35,012, to which Quetta contributed Rs. 2,23,214, Pishín and Shorarúd Rs. 1,04,191 and Chaman Rs. 7,607. Up to 1892-93, the total revenue of the District had shown a progressive increase and amounted in that year to Rs. 3,64,547, owing to an excellent agricultural season, but, from 1893 onward, it began gradually to decline and reached its lowest point in 1897-98, since which time, however, it has shown signs of recovery.

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Revenue and expenditure of the District from 1897.

From April 1, 1897 a fresh *quasi*-Provincial settlement was sanctioned, which covered the whole of the revenue and expenditure of the Administered Areas in Baluchistán, and details of the revenue of the District from that year will be found in table XVII, Vol. B. The settlement has again been renewed from April 1, 1902. Separate figures for each tahsíl are available only in the case of Land Revenue, as the Excise contracts are sold for the District as a whole, all receipts at Chaman are credited into the Pishín Sub-Treasury, those of Shorarúd are credited in Quetta, while the income-tax levied on salaries is not shown by tahsíls. It will be observed that the principal sources of income are Land Revenue, Excise and Stamps, to which are added minor items under Law and Justice, Civil Works, Registration, Police and Miscellaneous. The total receipts during the quinquennial period 1897-98 to 1901-02 averaged Rs. 2,98,363 per annum while those of 1902-03 were a little less, viz., Rs. 2,95,279. In this year, Land Revenue comprised 38 per cent. of the total, Excise 32 per cent., and Stamps 15 per cent. It may be mentioned that it was an exceptionally bad agricultural year.

The quinquennial period, 1897-1902, opened with a particularly bad year, but a gradual increase in revenue occurred, especially under Land Revenue and Excise, until the total rose to Rs. 3,22,371 in 1900-01. In this year the excise revenue reached the highest recorded amount, Rs. 1,14,314, owing to the inclusion of the duty levied on beer in 1898 and the higher bids obtained for excise contracts sold by auction. Throughout the period the revenue from Stamps and "Other Sources" remained fairly stationary.

A large diminution of revenue, amounting to about twenty thousand rupees, took place in 1902-03, chiefly owing to the exceptionally dry months from December 1901 to March 1902, which caused the water in many of the springs and *kárézes* almost to disappear. The Political Agent in his annual Administration Report remarked :—

"There was considerable mortality among the flocks of the Achakzais of Toba, and many of the flock-owners of Quetta and Pishín migrated to Thal-Chotiáli and Zhob in the hope that they would get pasturage for their animals in those districts. The nomads who usually come to this District in large numbers were hardly seen. Conditions being so unfavourable, no revenue could be collected from the people of Toba Achakzai, Toba Kákari and Barshor. In Quetta, remissions and suspensions had to be granted."

There was a decrease of about Rs. 6,000 under Excise, want of competition occasionally causing loss. The revenue under "Other Sources" was in excess of the average by about twenty-nine thousand rupees, this being due to the

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contribution paid by local funds for the cantonment and municipal police having been for the first time shown as a credit in the accounts.

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Early Revenue history.

The Ain-i-Akbarí informs us that in the time of the Emperor Akbar, at the end of the sixteenth century, the *mahâls* or districts of Fushang (Pishín), Shál (Quetta), and the Mashwáni country, i.e., Shorarúd, formed part of the province of Kandahár, and were required to furnish a force of 2,550 horse and 2,600 footmen, and to pay 37½ *túmáns** equivalent to 281 rupees, 4,340 sheep, 1,280 *kharwárs* of grain, and seven maunds *Kandahári*, or 28 seers, of butter. If the value of a sheep be reckoned at Rs. 3, a *kharwár* of grain at Rs. 20, the ordinary price of wheat, and a maund of butter at Rs. 40, the total revenue of the District was equivalent to Rs. 38,929-4, or say Rs. 39,000; but the addition of so large a body of fighting men to the Emperor's forces, when occasion required, must have been a very valuable asset in itself, the equivalent of which cannot be estimated.

Revenue history of Pishín.

Coming to later times, the system of men-at-arms appears to have been in force during the reign of Nádir Sháh. In the time of Ahmad Sháh Abdáli, we know that the *gham* or assessment of Pishín consisted of 895 *naukars* or men-at-arms, excluding the contingents of the Achakzais and Sanatia Kákars†. These *naukars* performed no specific duties in time of peace. Whenever they were required for service they marched under the flag of their tribal chief or Khán, who provided supplies for them. Saiads were exempt from service.

In 1773, certain tribes, which had previously provided 151 *naukars*, refused to comply with the assessment and abandoned their lands which were then confiscated to the State. These were the :—

	Naukars.		Naukars.
Tor Khél ...	... 30	Brought forward	95
Muhammadzai	... 8	Hamránzai-Maghdozai ...	4
Totak ...	... 16	Sufánzai ...	... 17⅓
Popalzai ...	... 12	Habíbzai ...	... 17⅓
Kulálzai ...	... 16	Umarzai ...	... 17⅓
Masézai ...	... 13		
Carry forward	... 95	Total	... 151

* 1 *túmán* is equal to 800 *dáms*; 40 *dáms* are equal to 1 *tabrézi* rupee; and 8 *tabrézi* rupees are equal to 3 Indian rupees, *vide* Ain-i-Akbari, Vol. I, page 31 and Vol. II, page 393. Dr. Duke's Report on Harnai and Thal-Chotiáli, page 4, may also be consulted.

† See Settlement Report of the Pishín tahsíl, 1901.

In 1833, Pishín was given to Khushdil Khán, the nephew of the Governor of Kandahár, as a *jágír*, and Khushdil Khán proceeded to impose revenue on the Kárézát-i-Kákari and Lora Kákari circles in it for the first time. The assessment on the former was Rs. 1,423-8 and 456 maunds of wheat, and on the latter Rs. 104-8 and 1,119 maunds and 38 seers of wheat. On other *mahdls* revenue was levied in kind, the rates varying from one-sixth on unirrigated lands and on lands irrigated by *kárézes* to one-fifth on flood and spring irrigation and one-third on stream irrigation.

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During the reign of Amír Dost Muhammad Khán (1835 to 1839 and 1842 to 1863), the military service, which had been hitherto found by the inhabitants, was commuted to cash except in the case of the sections known as Súr and Lamar. At the same time certain tribes agreed to pay a share of the produce. The result of the changes introduced was that 323 *naukars* accepted cash assessments at different rates, the Ahmád Khéls and Bárakzais being assessed at Rs. 30, the Sulaiman Khéls at Rs. 23-8, and other tribes at Rs. 14-8 per *naukar*, whilst revenue in kind (*batái*) was taken from 572 *naukars*.

Additional taxes were levied in the shape of (*a*) a tax on cattle, called by the Afgháns *sar rama*, the rates being one rupee per camel, eight annas per cow, six annas per donkey, and one anna per sheep or goat. Horses, mares and bullocks were exempt. It was assumed that the State was the owner of all grazing lands and had a right to tax those who used its pastures. Saiads, and such tribes as were under *naukar* assessment, were exempt from the tax. (*b*) A tax on water mills. This was levied only on mills in the Lora Kákari circle, and in the villages subject to *batái*, the amount being summarily fixed every year. (*c*) *Súrsát.* This tax was levied at the rate of eight annas per *naukar* from such *gham-i-naukar* villages as had refused to pay land-revenue in cash. The rate in Barshor was 1¼ seers of *ghí* per *naukar*, while a lump sum of Rs. 55 was fixed on the Kárézát-i-Kákari circle. (*d*) *Kulba khushkába.* A tax, at the rate of eight annas per pair of oxen, levied from persons who cultivated dry-crop land. (*e*) *Dokákín* or a tax of Rs. 3-8 per house on blanket weavers (*péshawar*) and blacksmiths. (*f*) *Naziát-ul-Hanúd.* A poll-tax of Rs. 2-8 on each adult Hindu male who lived in Pishín or kept a shop. *Bhúsa*, melons, water-melons and lucerne were not taxed, as, apparently, they had no marketable value, but officials could obtain these articles for their requirements free of cost.

During the two years 1876 and 1877 immediately preceding the occupation of the valley by the British Government, the revenue from all these sourses averaged Rs. 19,500 per annum.

Revenue history of Shorarúd.

Under Akbar, the Mashwánis of Shorarúd paid 7 *Kandahári* maunds of butter and 200 sheep, equivalent to Rs. 628, and

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also provided 50 horse and 100 foot. In Afghán times, Shorarúd formed part of Shoráwak, the neighbouring district, and paid revenue in kind at the rate of one-tenth of the produce, a rate which was subsequently raised to one-seventh. This was the prevalent rate when this small tract passed into British hands in 1881. A grazing-tax on camels and sheep and transit-dues were also levied.

Revenue history of Chaman.

The Achakzais of Toba were nomads, living chiefly on the produce of their flocks and on what they could obtain by plunder, and appear to have been considered too poor to pay any revenue. The Afghán authorities in Kandahár, however, required them to furnish a contingent of 530 *naukars* or men-at-arms to aid in the collection of revenue in Pishín. The sections noted in the margin supplied them. They were employed under their own tribal headmen for about 3 months in the year, and at times of emergency their numbers were doubled; they were also sometimes called upon to serve beyond their tribal limits. Calculating 530 men at eight annas a day for three months, the equivalent of the revenue payable may be computed at about Rs. 23,850 per annum.

Malézais	30
Ashézais and Usmánzais	50
Hamídzais	50
Nasratzais and Biánzais	200
Bádinzais and Bádízais...	200

Revenue history of Quetta.

Immediately before its lease to the British Government, the revenue in the Shál *niábat*, now known as the Quetta tahsíl, was obtained by the Khán of Kalát partly from a fixed assessment in cash or kind, *zar-i-kalang*, and partly by taking a share of the actual produce. The rates varied: the highest being one-third on lands irrigated by streams and the lowest one-tenth on rain cultivation. The share of the State was obtained either by appraisement (*tashkhís*) or by division of the produce (*batái*). The land revenue during 1877-78 amounted to about Rs. 10,000 and in 1878-79 to about Rs. 23,000.

Early village system.

The conditions prevailing among the indigenous population till within quite recent times present a picture of extreme simplicity. Among the nomadic population of the District, each section of a tribe, and, among the settled inhabitants, each village was of the nature of a small corporation, the affairs of which were managed by one or more headmen, called *arbáb* or *malik*, who generally received some small remuneration from the State. In some cases, too, they held a small amount of land and water which had been set apart for them by the villagers, and they also received a cash payment varying from one to five rupees, on the marriage of a girl, which was paid by the bridegroom. These *maliks* led the people in times of war, collected Government revenue, settled petty disputes, managed village and tribal affairs in general, and arranged for the construction of

new, and for repairs to old, sources of irrigation. Each village had one or more *mullás* who conducted prayers, performed marriage, funeral and other domestic ceremonies, and occasionally taught the village children. In return, the *mullá* was given *zakát* at the rate of one-tenth of the produce of land and of one-fortieth of that of the flocks, and certain fees. The *mullá* was also the village physician. Important villages had a blacksmith and a carpenter, while smaller sections or hamlets had one black-smith among several. These artisans made and repaired implements of husbandry, performed menial services at marriages and funerals, and at harvest time were paid their wages in kind at a fixed rate per *shabánaroz* of water. They also got a share in the wool of the flock after shearing, and presents of dried meat. Potters and other menial servants were unknown, the women-folk sewing, washing and repairing the clothes and making the few earthen pots required, while the men made their own sandals and performed for themselves the offices usually assigned to the barber and carpenter in India. These conditions still continue in the greater part of the District, especially in Toba Kákari and Toba Achakzai.

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Modern developments.

Developments in Pishín.

During the first two years of British administration the Afghán system of revenue was followed in Pishín, but this was found to be far from satisfactory, and, on the representation of Colonel W. G. Waterfield, then officiating Agent to the Governor-General, the Government of India, in 1882, sanctioned the deputation of Rai Bahádur Hittu Rám, Native Assistant at Sibi, on special duty for six months, to enquire and report upon the revenue administration of the whole Agency. In sanctioning Rai Bahádur Hittu Rám's deputation, the Government of India deprecated any attempt to introduce artificial uniformity into the revenue management of the various Districts, or to attempt to obtain a comparatively large revenue at the risk of discontenting the people. Rai Hittu Rám's enquiry, which was necessarily of a very summary nature, was concluded during 1882-83, the report being submitted to Government in 1885, but no definite action was taken on it, except that the poll-tax on Hindus was abolished. Meanwhile, in 1884, the Government of India had suggested that the District officers might make rough summary settlements, village by village, removing the more obvious inequalities, abolishing profitless and irritating fees, and even commuting in special cases, when both landlord and tenant consented, grain-dues into cash rents. The result thus gained would, the Government of India thought, make a regular settlement comparatively easy, and, moreover, the experimental settlements, effected in a number of villages, would give information as to the feelings of the people on the subject of cash rates and other matters.

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The batái system.

The rough and ready methods adopted in the early days of the Agency for the collection of revenue in kind are indicated by the following account by Captain Gaisford of the proceedings in Duki, which may be taken as typical of all parts of the Agency. On his arrival in the Thal-Chotiáli District, in May 1883, he found the *rabi* harvest in progress. The tahsíldár was engaged in realizing one-sixth of the grain as the Government share. He had guards (*karáwas*) posted at the villages to see that no grain was surreptitiously removed from the threshing floors before the *batái* or division was made. The men employed consisted of one or two servants of the tahsíldár and some local men and Punjábis. Captain Gaisford soon saw that the system was bad and that the *karáwas* were not to be depended upon. As they were merely employed temporarily, and had nothing to look forward to, their one object was to make as much and to do as little as possible. As a rule the villagers made them comfortable, killing a sheep for them occasionally and providing them with the best of everything. In consequence, Captain Gaisford advocated the employment of native cavalry sowárs and the following system was adopted: The villages were divided into groups, and each group was put in charge of a daffadár, who was responsible for it. Each village had two sowárs told off to it; one of these had to remain at home, while the other patrolled all round the crops and threshing floors. The sowárs were sent out before the grain was ripe, and their chief duty was to see that the cattle were not allowed to trespass in the standing corn. As the wheat or barley was cut, it was collected and taken to the threshing floors, which were located as centrally as possible. Gleaners were permitted on ground from which the sheaves had not been removed. Energetic women were watched, and it was found that none could collect and beat out more than five seers of corn daily. This was, therefore, the maximum amount that any woman or boy was allowed to take into the village; and for this the sowár at the door was responsible.

When the grain had been cut, collected, trodden out, winnowed and cleaned, each man made his portion into a large heap. Under the supervision of the daffadár, these heaps were divided into six equal lots. One was taken for Government and then put into bags, loaded up, and taken to the granaries by the *zamíndárs*. The wheat was measured by the country measure, or *path*, as it was put into the bags, and at the granary it was weighed before being stored. The wheat was sent off, usually under charge of a levy sowár who was given a *chálán* by the daffadár who took the *batái*. Each sowár was given a *thappa* or stamp, and, as soon as the wheat had been trodden out, or was in a more advanced stage, it was

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the sowár's duty to affix a mud seal on every heap at nightfall. At day-break each seal was again inspected, and, if found intact, the *zamíndár* was permitted to continue his work. If broken, the heap was investigated. Sometimes dogs and jackals were the cause, sometimes the grain had been stolen. Each case was investigated by the daffadár and a report sent to the tahsíldár. If the tahsíldár and his subordinates were fairly active and continually on the move, the system was found to work fairly well, and the *zamíndárs* were not dissatisfied.

This system is, with slight modifications, that still followed in places where revenue is taken by *batái*. Troops are, however, no longer employed, their place being taken by the sub-divisional and tahsíl officials, assisted by local levies and occasionally by paid *mushrifs*.

The whole system formed the subject of a report to the Government of India in 1887, in which Colonel Sir Oliver St. John drew attention to Lord Lawrence's comments on the *batái** system, quoted his own experience in Pishín of its demoralising influence alike on its administrators and administered, referred to the trouble it had given rise to in Pishín in 1880-81 and its unpopularity, and urged the advisability of extending a system of cash assessments not only to the Quetta-Pishín District but to the entire Agency. He was thereupon authorised by Government to take steps to abolish *batái* and introduce fixed assessments, keeping the demand low and aiming at the eventual substitution of cash for kind collections.

A commencement of the new system was made by Sir Oliver St. John with proposals for the abolition of *batái* in the Sarwésht and Surkháb circles and two other villages in Pishín, comprising in all 17 villages. He proposed an assessment of Rs. 14,472-4 on the Sarwésht and of Rs. 13,424-4 on the Surkháb circle; Rs. 526 on the Dehsora and Rs. 379 on the Arambi Káréz. This assessment was based on the produce of normal years converted into cash at reasonable rates. It was proposed that all claim to revenue on *khushkába* or unirrigated lands should be waived, as statistics showed that in three out of eight years from 1879 to 1886, namely 1880, 1881 and 1883, the rain crops entirely failed, while in a fourth year,

* In connection with the Déra Gházi Khán settlement Lord Lawrence wrote in 1854: "The people have very generally expressed a desire during the last two years to revert to the old system of payment in kind. It doubtless suits their improvident, indolent habits, and has the advantage of being adapted to the uncertainty of harvests. * * * * * * The evils of the system of *batái* and *kankút* are notorious, they make the Government officers the corn factors of the country; they keep the people in a state of pupilage: they necessitate the employment of a host of harpies, and corrupt both the people and the public servants."

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1879, they only produced one-hundredth part of the total, i.e., 55 out of 5,414 maunds. Only in half the years did the cultivators get any return that could at all compensate them for the seed they had put in the ground.

Sir Oliver St. John's views with regard to the abolition of *batái* were opposed to those held by Sir Robert Sandeman, and eventually, in July 1888, the Government of India decided that the assessment on the 17 irrigated villages should be fixed in grain, on the average of the produce obtained between 1881-82 to 1886-87, with an option to the cultivators to convert this produce assessment into a cash rate at the prices quoted by Sir Oliver St. John. With regard to the unirrigated lands, the Government of India suggested that the Government share which had hitherto been taken in a fairly good year from these dry-crop areas, should be the assessment, and that, according to the character of the season and the state of the crops, full assessment, part of the rate or nothing at all should be recovered.

Matters having proceeded so far, all arrangements were upset by the proprietors of the two circles concerned refusing to accept them. This led to the issue of orders by Sir Robert Sandeman introducing *batái* both for grain and fodder, at the rate of one-sixth of the produce in all villages. The orders remained in force up to 1892, but the revenue was actually levied by contract (*ijára*), and not by division of crops, which caused considerable discontent. In 1892, *gham-i-naukar* was reintroduced in certain villages, the rate per *naukar* being doubled, and orders were also issued that, where revenue was levied in kind, the Government share on lands irrigated from streams should be raised from one-sixth to one-fourth. Meanwhile it had been decided to extend the Settlement operations, which had been begun in Quetta, to Pishín, and in 1895-96 temporary cash assessments were sanctioned in the Surkháb and Sarwésht circles and five other *mahál*s.

The following table shows the revenue realised at the various periods at which important changes were made:—

	Rs.	A.	P.
1881-82—Afghán system	54,625	9	9
1888-89—Last year of *gham-i-naukar* system	50,359	13	0
1890-91—First year of *batái*	60,218	10	9
1892-93—Reintroduction of *gham-i-naukar* system in certain tracts at enhanced rates	61,406	10	0
1895-96—Temporary cash assessment ...	69,432	0	9

The result of the Settlement operations will be detailed in a later section.

Developments in Shorarúd.

Dr. O. T. Duke, Assistant to the Agent to the Governor-General, whilst on special duty in Shorarúd, computed its total

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annual revenue from July 1878 to June 1879 at about Rs. 500. After Pishín had been assigned to the British Government in 1879, a question arose as to whether Shoráwak and Shorarúd were included or not, and it was not till June, 1882, that the exclusion of Shoráwak from the British sphere and the permanent retention of Shorarúd were decided upon. The Agent to the Governor-General was authorised to collect a nominal revenue, should it be found possible to do so, and revenue was accordingly assessed for the first time in 1882-83, and amounted to Rs. 1,201. Up to the year 1889-90 the rate of assessment in some villages was one-seventh and in others one-tenth, besides which a certain amount, varying from one-half to one-sixtieth of the revenue, was also taken as *mushrifi* or wages of caretakers. From April 1, 1890, a uniform rate of one-sixth was introduced. In April 1898, a fixed cash assessment of Rs. 1,250 was imposed upon the four *kárézes* in the area for a period of nine years, and this sum covered the grazing-tax payable by the permanent inhabitants. Since then two new *kárézes* have been constructed, one of which was exempt from payment of revenue up to 1903 and the other to 1907. On *khushkába* lands the revenue is still levied by *batái*, and the nomads, and such other inhabitants as are not included in the fixed assessment, pay grazing-tax at the usual rates.

Developments in the Chaman Sub-division.

The question of imposing revenue upon the Achakzais of Toba was first raised in 1892, and rough estimates of the paying capacity of the plateau, varying from Rs. 12,000 to Rs. 20,000, were made, but no decision was arrived at until 1895-96, for which year the headmen of the various sections agreed to pay a lump sum of Rs. 6,600. In July and August 1895, Mr. J. A. Crawford made an extended tour in Toba, and, after making a full enquiry, came to the conclusion that the average revenue-paying capacity of the Achakzai country was Rs. 12,000. He based his calculation on the following figures:—

3,000 acres of irrigated land at Re. 1¼ an acre	Rs, 3,750.
10,000 acres of unirrigated land in a good year at 6 annas an acre	,, 3,750.
Grazing-tax at half rates	,, 4,500.

But considering the precariousness of the *khushkába* cultivation and the desire of the Government in favour of a low revenue-demand, he proposed an assessment of Rs. 8,000, including grazing-tax. Those who did not share in the assessment would be liable to this tax. As the main objects of the assessment were not pecuniary but political, viz., to accustom the Achakzais to control, to induce them to settle down to peaceful occupations, and to teach them to refer their feuds and quarrels to the Political authorities instead of taking the law into their

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own hands, the Government of India sanctioned the assessment for three years from 1896-97. It was internally distributed by the *maliks* themselves and worked out as follows:—

			Rs.
Núrzais and Sultánzais	3½ *Naukars*	...	390
Ashézais ...	... 24	,, ...	2,249
Malézais ...	... 10	,, ...	975
Hamídzais ...	... 15	,, ...	1,385
Alízais ...	... 20	,, ...	2,040
Bádínzais ...	... 10	,, ...	961

During the first three years the actual amount realised was: 1896-97, Rs. 7,607; 1897-98, Rs. 2,083; 1898-99, Rs. 5,163; and in February 1899 the period of assessment was extended by seven years. In sanctioning this extension, the Government of India said that the arrangement was conditional on the loyalty and good behaviour of the Achakzais, and that the right to bring it to a close was reserved, should the conduct of the tribe afterwards render such a measure desirable. On receipt of these orders Captain J. Ramsay, C.I.E., then Political Agent, made an extended tour in Toba in 1899, and the *maliks* urged that they could not undertake to collect Rs. 8,000 in future from their tribesmen, basing their contention on the grounds that a large number of the tribe had emigrated to Afghánistán; that they had had a succession of dry years, which had impoverished the tribe, and that they had not recovered from the damage done to their flocks in the previous year.

After a thorough examination of the assessment to see what each *naukar* had contributed in the past, the maximum that Captain Ramsay could get the *maliks* to agree to was Rs. 6,310. At the same time he considered Rs. 8,000 not excessive as a normal assessment, and reviewing the position he wrote: "Only two courses are open to us. The first is to admit that the tempting offers of the Amir have had the effect of reducing the number of Achakzais who come to or reside in our territory, and that a succession of bad years has reduced the revenue-paying capacity of those that still remain our subjects; that, for the sake of a few hundred rupees, it is not worth our while to break up the present tribal system of management, and therefore to decide that we should be wise to accept the offers made by the *maliks*. The other course is to reject the offers of the *maliks* and collect the revenue ourselves. In order to do this we should have either to make a regular Settlement, or take revenue by appraisement of the crops, or take it by actual division of the crops; in either of the two latter cases grazing-tax would have to be taken by actual enumeration, at any rate at first." He deprecated the second course, owing to the difficulties of collection and the cost

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involved, and recommended that the offer of the *maliks* should be accepted. His proposals were sanctioned, and the question of a re-distribution of the assessment amongst the various sections of the Achakzais which had been raised was ordered to be postponed, until agricultural prospects improved and the inducements for emigration to Afghánistán had become less favourable.

During 1899-1900 and 1900-01, the revenue realised amounted to Rs. 5,814 and Rs. 7,481 respectively. In 1901-02, two *shábánas* of water in the Sirki Tilérai Káréz were brought into Chaman, and the aggregate assessment was reduced to 7,924 in consequence. This sum includes an assignment of the annual value of Rs. 10, making the net demand Rs. 7,914, of which Rs. 6,789 were realised. Owing to drought, the actual revenue realised in 1902-03 amounted only to Rs. 814, but in 1903-04 it rose to Rs. 7,497, consisting of: fixed assessment, Rs. 6,244; fluctuating assessment, Rs. 817; and grazing-tax, Rs. 436.

Developments in Quetta.

Up to 1889, revenue continued to be levied at the rates in force when the *niábat* was acquired from the Khán of Kalát. Meanwhile, in February 1887, the Government of India had sanctioned a special establishment for the settlement of the Quetta tahsíl, the objects being the partial equalisation of the rates levied on lands watered by different systems of irrigation, and the substitution of a fixed assessment in kind or cash for the existing system of *batái* in those villages in which the latter system was prevalent.

The main principles indicated for guidance were that the new settlement should be for three years; that the fixed demand should be calculated on the average of the years likely to afford the fairest basis, less an all-round reduction of 10 per cent. to avoid the necessity of constant remissions; and that the new assessment should be made with villages, not with individual cultivators.

The necessary enquiries were made during August to December 1887, and in October 1888, Mr. (now Sir Arthur) Martindale, then Political Agent, Quetta, submitted his report proposing an assessment of Rs. 13,833 on 15 villages which had permanent irrigation, and of Rs. 1,055 on three villages which had rain-crop cultivation. These figures were based on the *batái* returns of the preceding three years, 1885-86 to 1887-88, valued at rates which had been accepted by Government. The proposals were accepted but not carried out, as, in June 1890, Sir Robert Sandeman's order suspending all fixed assessments in kind or cash, and introducing *batái* at a uniform rate of one-sixth of the produce, had been issued. The latter system continued up to 1896-97, except in 1895-96, for which year temporary cash assessments were sanctioned.

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Settlements and their periods.

In 1891, the appointment of a Revenue Commissioner was sanctioned, one of whose special duties was to be the revision of the land revenue system, and in 1892, proposals were submitted by Mr. (now Sir Hugh) Barnes for the survey and settlement of Quetta and Pishín. The principles laid down for the Settlement were that it should be summary, but still such as to be much in advance of the arrangements already in force, and to supply an authoritative record of rights; that the chief object was to organise a permanent land-record establishment of an economical and efficient character; that the assessment was to be very light, and that little increase of revenue was to be expected; that, although the assessment could be determined largely with reference to sources of irrigation, it would be advisable to make it perfectly clear that the assessment upon each *káréz*, must be proportionate to the extent of land irrigable from it independently of the question whether the land did or did not belong to the *káréz* owner; that unirrigated land of any considerable extent should be excluded from the fixed assessment; that the value of one-sixth of the gross produce might be accepted as the basis of the assessment; that, though this standard need not be actually worked up to, departure from it should be justified; that it would be inexpedient to suddenly impose any considerable enhancement upon the revenue collections of the last five or six years; that the Government share of the produce according to the customary rates for division of crops should be valued at such average prices as might be fairly expected to be maintained for the next ten years; and, finally, that the result should be used as a maximum standard for purposes of check rather than as one to be necessarily worked up to.

The survey was to be field to field, on a scale of 16 inches to a mile, and the village maps were to be linked with the professional survey maps. The Government of India also authorised the issue of rules regarding the maintenance of records and the imposition of a village officer's cess.

The Quetta settlement.

In accordance with these orders operations were begun in 1892 and completed in 1896. Mr. J. A. Crawford, then Revenue Commissioner, worked out an assessment of about Rs. 65,000, excluding the privileged tenures, on irrigated areas, but for the reasons given below, he proposed Rs. 45,000 as the absolute minimum and Rs. 50,000 as the maximum for the new assessment. He wrote: "A cash assessment fixed for a term of ten years is now to be introduced for the first time in supersession of a system under which the demand varies with the season, and the cultivator has the option of paying in cash or in kind; the settlement is not altogether popular, especially with the leading men of the tribes, and it would be extremely unfortunate if the new assessment

were refused, and recourse to section 55 (2) of the Land Revenue Act became necessary anywhere. The information upon which the cash assessment will be based is mostly the result of one season's work, and leaves much to be desired; there is a noticeable amount of indebtedness in this small tahsíl and land appears to be changing hands at falling prices; in addition to the assessment, a village officer's cess bringing in about Rs. 3,000, will be imposed under section 29 of the Land Revenue Act; since the year 1890 a poll-tax on cattle has been realised by enumeration in the Quetta tahsíl, and during the current year the proceeds have amounted to nearly Rs. 8,500, of which Rs. 2,500 have been collected from the settled inhabitants in the tahsíl; this tax is not meant to fall on cultivators, but it undoubtedly does to some extent. This Settlement is a political rather than a revenue matter; and, from the beginning, the Government of India have recognised the expediency of fixing a light revenue demand in the Quetta tahsíl."

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His proposals were accepted, and the assessment was finally worked out to Rs. 54,930-10-10, a sum which included Rs. 2,713-7-9 on account of *lambardári* allowance or village headmen's cess. The assessment was confined to irrigated lands; in unirrigated areas revenue is still levied by *batái* at the general rate of one-sixth of the produce. The period of the Settlement was fixed at ten years from April 1, 1897.

The Pishín settlement.

The extension of the Settlement operations to the Pishín tahsíl was sanctioned in October 1896, the same principles being followed as those laid down for the Quetta Settlement. The assessment was ordered to be fixed with special reference to the sources of irrigation, and mainly on the irrigable area, the apportionment being in accordance with the recorded shares. The question of maintaining the old *gham-i-naukar* system in certain villages was to be considered during the course of the Settlement; the former demand was to be taken into account; and the new assessment was to be very light. Where, owing to the irrigable land being scarce and water plentiful, a field-to-field survey seemed necessary the Local Government might direct that the maps should be prepared in that manner.

The work was begun in 1897, and cash assessments were proposed in eleven out of fourteen circles; one circle (Haidarzai) was almost all revenue free, and it was decided to retain the *batái* system in the two circles which depended for their irrigation on the Shébo Canal and the Khushdil Khán Reservoir. In circles in which the *batái* system had prevailed, the average receipts were taken as a guide in fixing the assessment, while in those which had previously paid a fixed assessment, due consideration was given to the position of the circle, the quality of its irrigated lands, the nature of its soil, and to the instructions

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of the Government of India, which directed that the assessments should be light and be made with the consent of the people. The effect was an assessment of Rs. 59,347 on 11 circles against the previous assessment of Rs. 62,553, or a decrease of 5·1 per cent. The people of the Ségi circle and the Badwán village refused the proposed cash assessment and reverted to the *batái* system. The receipts for these two tracts were estimated at Rs. 8,000, and, including this item, the result was an increase of 7·1 per cent.

Assessment of rain-crop areas in Pishín.

Having regard to the precariousness of the *khushkába* cultivation, Mr. Colvin, who was Revenue Commissioner during the last part of the Settlement, recommended that when the culturable area formed an addition, even a large addition, to irrigated *maháls*, it should not, for the present, be assessed separately, but that, where there were extensive tracts of culturable unirrigated land forming by themselves entire *khushkába mahåls*, Government should take revenue in the form of an actual share of the produce in years in which cultivation was successful. This system was adopted. Twenty years was proposed and accepted as the period of Settlement from April 1, 1899, subject to the condition that cultivation from any new source of irrigation would, after the lapse of the recognised period of exemption, be assessed to revenue.

Review of existing assessments (1903).

As uniformity does not exist, it will be useful at this point to summarise briefly, in the form of a statement, the various systems prevailing in different parts of the District.

[STATEMENT.

Area.	Description.	Revenue system.	Period of Settlement, if any.
Pishín.	Irrigated land.	Cash assessment, except in Ségi, Badwán and tracts under canal irrigation.	20 years from April 1, 1899.
	Unirrigated.	Included in the assessment of irrigated *mahàls*, except where very large tracts are under cultivation, such as Ségi, where produce revenue at one-sixth is taken.	
Shorarúd.	Irrigated.	A summary cash assessment on four *kárézes*.	9 years from April 1, 1898.
	Unirrigated.	Revenue in kind at one-sixth of the produce.	
Chaman Sub-division.	...	Cash assessment in a lump sum distributed among the tribesmen.	10 years from April 1, 1896.
Quetta.	Irrigated.	Cash assessment.	10 years from April 1, 1897.
	Unirrigated.	Revenue in kind at one-sixth of the produce.	

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Statistics of land revenue.

In those parts of the District in which revenue is still levied in kind, the aggregate amount collected fluctuates with the character of the agricultural seasons and the prevailing prices. Table XIX., Vol. B., shows the revenue in kind realised, tahsíl by tahsíl, in each of the six years from 1898 to 1903, excluding the Government irrigation works, and the average price at which each article was sold. The principal item is wheat. The largest amount of produce collected was 4,729 maunds in 1901-02, which was sold at an average rate of Rs. 2-7-4 a maund, and the lowest 414 maunds in 1902-03. The latter year was an abnormally dry one, and, the quantity

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of grain being small, the price rose to Rs. 3-10-0 a maund. Table XVIII., Vol. B., besides embodying the figures obtained from table XIX., also shows the land revenue realised in cash, such as fixed assessments, temporary contracts, tax on water-mills and grazing-tax, during the period ending with March 1903. The annual average receipts amounted to Rs. 1,39,934, the highest amount, Rs. 69,966 being contributed by the Pishín tahsíl and the lowest, Rs. 1,899, by Shorarúd.

Land tenures. Jágírs.

The land tenures of the District are of an extremely simple nature. Government is the sole collector of revenue, except in certain *maháls* in the Nau Hisár and Kuchlák circles of the Quetta tahsíl, in which the Raisáni and Rustamzai *jágírdárs* are permitted to collect revenue by *batái*, at the rate of one-sixth of the produce from irrigated lands and of one-tenth from *khushkába*. The Raisáni Sardár also levies a lump quantity of grain, varying from 3¾ maunds to 10 maunds of wheat and 1¼ maunds to 5 maunds of maize, in some of these *mahdls* as *náibi*, and one *kása* or five seers of wheat as *tapadári*. The head of the Rustamzai clan of the Raisánis is also entitled to collect, at the spring harvest and for his own sole benefit, from every other landowner whether Bráhui or Kákar, a cess called *lawázima* at the rate of 6 *kásas* or 30 seers of wheat in the Marígat Káréz and of sixteen *kásas*, or 80 seers, on every *shabána* of water and land in the Mashélakh Káréz. There is an understanding that these grants entitle the Government to the service and assistance of the Raisáni tribe in times of emergency. These assignments originated in the influential position occupied by the Raisáni Sardár, as chief of all the Sarawán Bráhuis, in virtue of which he and his tribe obtained considerable privileges under the Khán of Kalát. Their headquarters in the highlands are at Kahnak, and, in former times, they gradually extended their authority down the Dulai valley to the boundaries of Nau Hisár, and little by little ousted the Bázai Kákars. Over the tract now occupied by the Sinjadi, Aghbarg, and Bábúzai *mauzas* the Raisánis appear to have obtained paramount authority, and, by virtue of their influence, they seem to have exercised many *quasi* sovereign rights over the Bázai cultivators of the valley, such as those of taking *bégár* or forced labour and *sursát* or forced supplies. In the course of the Quetta Settlement the Raisánis put forward a claim that all the land of the valley belonged to them, and this was decided by Mr. H. S. Barnes, then Revenue Commissioner, in 1894 by consent of the claimants, the Raisánis being granted full proprietary right in certain *mahdls* and being recognised as *jágírdárs* in the *kárézes* in which the Bázais possessed proprietary rights. The decision was confirmed by the Government of India in October 1896.

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The origin of tenancies and their character.

Most of the cultivators are peasant proprietors; the only other classes represented in the District are tenants, the majority of whom are only temporary. The northern part of the District long remained uncultivated, and nomads came and occupied land, first for grazing and then for cultivation, dividing it sometimes among sections, in proportion to the number of families (*plárganai*), or among individual males (*sarísar*). In other cases the land was obtained by conquest, as in Pishín, and divided on the same system. Land was also acquired as compensation for the loss of men killed in the course of blood feuds, and *hamsáyahs*, who had sought protection with tribes, were sometimes admitted into the tribe after a time and given a share in the tribal land. Individual cases are known among the Kákars and Achakzais of Pishín, and also in Shorarúd, where land and water have been acquired in payment of bride-price (*walwar*). Acquisition by purchase appears to have been not uncommon, and in this way the Kási Afgháns, who were once the proprietors of much of the District, have been gradually bought out by Kákars, who were originally flockowners. Mention may be made of the system known as *khat kashi*, under which one or more men dig a new *káréz* in another man's land, giving him a share in the water and acquiring a proportionate share in the land.

A new departure appears to have been taken in July 1895, when the dispute between the Durránis and the Yásinzai Kákars of the Quetta tahsíl about the tract known as the lands of the Hanna stream, was settled by the recognition of the Durránis as the superior proprietors (*ála málik*) and of the Yasínzais as inferior proprietors (*adna málik*) of the portion known as the *káréz mahále*. Such tenures were not previously known in the District but are an artificial introduction from the Punjab.

In these various ways a body of peasant proprietors has arisen owning their own lands and cultivating their own fields, the irrigated land being for the most part owned by individuals, though, in some cases in Pishín, periodical division takes place.

Custom of periodical distribution.

Permanent division among individuals has taken place in Quetta and Chaman, both in respect of irrigated and unirrigated lands. In the Lora Kákari, Kárézát-i-Kákari, Haidarzai, Kila Abdulla, Gulistán, Barshor and Toba Kákari circles and parts of the Sarwésht and Surkháb circles of Pishín, the division of irrigated land is generally permanent (*pukhta taqsím*), but in others periodical division takes place under one of the two systems known as *mushtarka* or *sarísar*. Under the *mushtarka* system, the shares in water are known and the land is divided annually by tribal groups and afterwards apportioned to individuals according to the share of water belonging to each. Under the *sarísar* system, the division is made, generally after every

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three years, among the whole of the adult males of a section. The unirrigated land in the greater part of the tahsíl is still held jointly, but individual co-partners are at liberty to bring under cultivation any part of such land, which they may desire. In Shorarúd the greater part of the land was divided by *kors* or families some 150 years ago, but there are still some dry crop tracts which are held jointly. When necessary, these are also divided according to the numbers of families originally fixed.

Tenants and tenancies.

In connection with the Settlement of the Quetta tahsíl, Mr. J. A. Crawford, Revenue Commissioner, wrote in 1895: "Less than half of the land is cultivated by the owners themselves, and the rest by tenants, who seem to be almost, without exception, tenants-at-will. The proprietor takes a share of the produce in kind. There are some variations, but the usual rent rate in recent years has been two-thirds of the gross produce after deduction of the Government share. These tenants are known by the name of *bazgars*, and seem to correspond to the *charíkárs*, mentioned on page 92 of the Kohát Settlement Report." As regards the Pishín tahsíl, Mr. E. G. Colvin, Revenue Commissioner, wrote in 1899 that the proprietary body were to a great extent themselves the cultivators, and that, where tenants were employed, the arrangement was a purely temporary one. According to the custom of the country, even if such an arrangement were continued for a series of years, the tenant could not acquire any rights to the prejudice of the owner, but was liable to be ousted at any time. He added that Government had recently recognised in some of its own villages the principle of tenant right, but that the grant of occupancy rights by Government to some of its tenants was a new departure, and would no doubt prove the beginning of a new era for tenants in Pishín. In Chaman and Shorarúd, the bulk of the land is cultivated by the proprietors themselves.

The occupancy rights, which have been recognised by Government in its own villages, in Pishín, are to be found in one *shabánaroz* of the Arambi Kárez, in the Saréla village, and in a few other *mahdls*. In the dry crop areas of the Quetta tahsíl, when a tenant expends much labour on the construction of embankments, he retains an alienable right so long as he maintains the embankments unbreached, does not intentionally allow the land to lie waste, and pays the *bohál* or landlord's rent. Such a tenant is called *lathband*, and if he fails to keep the embankments in repair, he can be ejected, on compensation being paid for the labour expended on construction. Such compensation is generally determined by arbitrators. Similarly, a tenant in Quetta, who lays out an orchard and builds an enclosure wall, acquires an alienable right of tenancy so long as the orchard is properly maintained. In Shorarúd, too, the *lathband* tenant possesses a similar right, but it is doubtful if

he can alienate it by sale, though he may sublet his land. In the vicinity of Quetta, a good deal of land and water is let for short terms, generally one year, to *baniás* and others for the cultivation of vegetables, and this custom appears to be on the increase. The rent in such cases varies, but is sometimes as high as Rs. 60 per acre if the tenant provides manure, and is known to have reached Rs. 140 per acre if manure is supplied by the landlord.

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Size of holdings.

The information available with regard to the size of holdings is incomplete, no distinction having been made, in the literature on the subject, between the number of holdings in irrigated and in dry-crop areas. The following remarks, therefore, must be received with caution :—

In Pishín the total number of holdings recorded at the Settlement, was 10,870, and the area of irrigated land, including gardens, was 102,897 acres, which would give a little over 9 acres as the size of a holding. Besides this, there were 270,542 acres of cultivable land, which would add about 25 acres to a holding. In the Quetta tahsíl the total number of holdings was 5,008 and the average area of irrigated land 6 acres, 1 rood and 39 poles, and of *khushkába* 2 acres, 2 roods and 9 poles. To this may be added 5 acres, 2 roods and 11 poles of cultivable waste, making a total of 14 acres, 2 roods and 19 poles. It is to be remembered, however, that only about one-third of the whole irrigated area is cropped annually, which reduces the annual area from which good crops can be raised with certainty by each cultivator to about 3 acres in Pishín and to a little more than 2 acres in Quetta.

Headmen or maliks.

The headman or *malik*, as he is locally called, has always been a prominent figure in the village and tribal organization, and his duties have consisted in arbitrating between disputants, in keeping order and peace, and in collecting the State demand when revenue was imposed. In Toba Achakzai, where little interference has taken place with the ancient system of tribal Government, he still plays a part of no little importance. Elsewhere the powers of headmen have been somewhat curtailed, since the introduction of British administration and of the Settlement, and rules have been framed for their appointment and removal. They are generally men who are proprietors of large areas in a *mahál* and who command respect from their tribesmen. Their duties are primarily to assist in the collection of the Government revenue, to keep order, and to inform the tahsíl officials of the occurrence of any serious crime and of other important matters. A certain number are employed in the levy service.

Remuneration of headmen.

In the Chaman Sub-division, where a lump assessment has been imposed, and where headmen of almost all important sections receive allowances from the levy establishment, no

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remuneration is paid for the collection of the revenue. Before the British occupation, the *maliks* in Pishín received fixed payments amounting in all to Rs. 339-13-3 in cash and 459 maunds, 15 seers of grain. In Quetta 13 *shabánaroz* of land and water, which were in the possession of headmen in certain villages, were exempt from the payment of revenue. The payments in Pishín were abolished in 1890-91, except in the Barshor circle, where they ceased in 1896-97, while in the Quetta tahsíl the *shabánas* were resumed in 1894-95. In both these tahsíls, as well as in Shorarúd, remuneration (*haq-i-malikána*) is now paid at a uniform rate of five per cent. on the gross land revenue, including grazing-tax and the tax on water mills. There are, however, the following modifications to this general rule. *Haq-i-malikána* is paid on Government lands on revenue only and not on rent. But when Government lands are leased, as in the case of the Government *shabánas* at Samungli, Tirkha Gurdit Singh and Karak, and the lessees themselves pay the rent and revenue into the tahsíl, no remuneration is paid to the *maliks*. In the case of lands watered by the Shébo Canal and the Khushdil Reservoir no distinction is made between revenue and water rate, and the *haq-i-malikána* is paid at the usual rate on the total Government revenue, which is levied at the rate of one-third of the produce.

Incidence.

In Pishín the minimum incidence on the irrigable area is R. 0-7-1 per acre in the Toba Kákari circle, and the maximum R. 1-6-1 in the Sarwésht circle, the average of the 11 circles being about R. 1. The maximum incidence per acre on the area irrigated annually is Rs. 5-0-3, the average being Rs. 2-13-10. In the Quetta tahsíl the minimum incidence of the assessment on irrigable area is R. 1-6-2 per acre in the Baléli circle, and the maximum, Rs. 3-9-4, in the Kási circle close to Quetta, the average being about Rs. 2-2-0. Lands lying near the town and cantonment of Quetta were assessed at Rs. 6-12 an acre. These lands are cropped twice a year with melons or vegetables, or six or seven cuttings of lucerne are obtained from them; the soil and water supply are good, manure is easily procurable; and the market is close at hand. The irrigated area actually under cultivation during 1902-03 in the Quetta tahsíl was 14,365 acres, and the amount of land revenue realised in cash was Rs. 53,358, which gives an all-round incidence of Rs. 3·7 per acre. The following table shows the incidence in each of the settled tahsíls, circle by circle :—

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Tahsíl.	Circle.	Incidence on irrigable area.			Incidence on area annually irrigated.		
		Rs.	A.	P.	Rs.	A.	P.
Pishín ...	Lora Kákari ...	1	4	5	2	8	10
	Kárézát-i-Kákari ...	0	8	2	2	0	8
	Surkháb	1	3	1	3	9	3
	Sarwésht	1	6	1	4	2	3
	Alízai	0	15	2	2	13	6
	Kila Abdulla ...	0	15	8	2	15	0
	Gulistán	0	14	10	2	12	6
	Ségi	0	15	4	2	14	0
	Shádízai	1	10	9	5	0	3
	Barshor	0	11	4	1	6	8
	Toba Kákari ...	0	7	1	1	5	3
Quetta ...	Sariáb	2	11	0	Information not available.		
	Kási	3	9	4			
	Durráni	2	4	4			
	Baléli	1	6	2			
	Kuchlák	1	6	7			
	Nau Hisár	1	7	0			

Rates of assessment in different parts of the District.

The cash assessments imposed in various parts of the District have been intentionally fixed at a light rate, and in ordinary years no difficulty is felt in paying the demand. The rates on gardens and on the land round Quetta may in fact be regarded as particularly low.

In parts, which still pay the Government revenue in kind, the ordinary share which Government demands is one-sixth of the produce, which also is not a heavy burden, for, under Afghán rule, the rates were as high as one-third from lands watered by streams, while one-sixth was exacted on lands irrigated by *kárézes* and on dry crop area. Writing in July, 1885, Mr. Barnes, then Political Agent, explained that the high rate of one-third in parts of Pishín was imposed because the Afgháns considered these lands as *zabti*, i.e., confiscated or Government lands, and that, though it was the recognised rate, as a matter of fact it was seldom if ever rigidly exacted. "Under Afghán rule," he wrote, "in a District at such a distance from headquarters as Pishín, it was easy sometimes to evade payment, or more often to come to an understanding with the revenue officials, which resulted in their getting a considerable increase to their emoluments, while probably not more than

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one-sixth went into the State treasury." At the same time he considered the rate of one-third heavy, and suggested, first, that the rate of the Government share should be considerably reduced, and, secondly, that one uniform rate should be taken from all lands, no matter from what source the supply of water came, the Government share being fixed at one-sixth on all classes of land without exception. He added, "In the new Settlements of the North-West-Provinces (now United Provinces of Agra and Oudh) it is, I believe, calculated that the Government share of the gross produce is not much more than one-tenth or one-twelfth. But that rate would be too low an one for Pishín. The North-Western Provinces Settlements are framed on the principle of taking, as the Government share, half the rent at which land will let to a tenant-at-will. In Pishín, lands let to a tenant-at-will pay to the owner either one-half or one-third of the gross produce according to circumstances. The Government share should, therefore, vary from one-fourth to one-sixth of the gross produce. As this is a newly-annexed and frontier district, in which it is most expedient to make all men content and happy under our rule, I would take the lower rate and fix the Government share at one-sixth."

In 1887, the Government of India authorised the reduction of the rate on lands irrigated by streams, the exact amount being left to the discretion of the Agent to the Governor-General with a provision that it should not fall below a minimum rate of one-fifth of the gross produce. Different rates, however, continued in Pishín and Quetta up to 1889, and in June 1890 the uniform rate of one-sixth was introduced. On a representation made by the Taríns and Saiads of Pishín, Sir Robert Sandeman said that he was certain that one-sixth of the produce fell hard on no one, and that, on the contrary, it was an exceedingly light assessment considering that most of the lands were irrigated from water-courses or *kárézes*.

In tracts irrigated from canals constructed by Government, the rate of revenue is one-third.

Distribution.

In Shorarúd, Quetta and Pishín the internal distribution of the assessment generally follows the recognised shares in water. The following extract from the Settlement Report of the Pishín tahsíl by Mr. E. G. Colvin describes the system.

"The internal distribution generally follows the recognised shares in the water. Every stream or *káréz* is divided into a number of *shabánaroz*, which are divided into *mázígar*, *pás*, or other shares. This distribution of the water supply was well understood by the people, and formed a convenient means of distributing the revenue. In some cases other considerations were allowed to weigh, e.g., the extent of land, and this was particularly the case in the Barshor and

Toba Kákari circles of Pishín, where the land is limited and the water supply copious. In distributing the demand, no attention was paid to objections from persons who claimed to have acquired land and water from other owners without liability to revenue. The actual owners of land and water have all been assessed, and in nearly every case, when their position under the law was explained to them, they have accepted the liability without demur. In some six cases, persons who held lands from *gham-i-naukar* owners without liability to revenue, have objected to pay the assessment now fixed for them. In these cases the assessment has been distributed among the rest of the owners in the village, and the cases themselves have been included in the list of revenue-free holdings, and treated as unauthorised *muáfis* which should be resumed. The Agent to the Governor-General has approved this proposal in every case, and I have directed the Settlement Extra Assistant Commissioner to assess these *mahàls* to revenue in anticipation of the orders of Government on the *muáfi* proposals.

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"It will be seen that the new distribution must mean the end of the '*gham-i-naukar*' system. Although in my dealings with the *maliks* I have found the rate per *naukar* a convenient basis for discussion, being easily intelligible to them, and though the total for a circle or village may even be, for convenience sake, a multiple of the number of *naukars* formerly assessed on that circle or village, the distribution of that total has been made in exact accordance with actual existing interests in land and water, and must operate to lay on each man's shoulders a burden fairly proportioned to his strength. No one, I think, except the few who benefited, will mourn the demise of a system which has brought so many inequalities and abuses in its train."

Details have already been given of the assessment in the Chaman Sub-division among the principal clans of the Achakzais on the *gham-i-naukar* system. The assessment is imposed on sections, sub-sections and septs in proportion to the number of their progenitors (*plárganai*) without regard to the land and water in the actual possession of each family. It is obvious that such a system must be attended with serious inequalities, and these have been intensified by the migration of some families to Afghán territory, leaving their shares in certain cases to be paid by those who remained behind. Nor does the system appear to be sufficiently expansive in a tract which is slowly but certainly developing. The question of redistribution is now (1905) engaging the attention of the authorities.

Date of payment.

The fixed cash assessments are payable in one instalment in Chaman, Quetta and Shorarúd and in some parts of Pishín;

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in other parts of the last tahsíl two instalments are permitted as shown in the following statement:—

TAHSIL OR SUB-DIVISION.	DATE OF PAYMENT.
Chaman	From October 15 to March 31.
Pishín—	
(a) Lora Kákari, Kárézát-i-Kákari, Shádízai, Kila Abdulla ...	November 15.
(b) Surkháb, Gulistán, Sarwésht and Alízai	Spring Crop, October 15. Autumn Crop, January 1.
(c) Barshor and Toba	October 1.
Quetta	November 15.
Shorarúd	November 15.

System of remissions and suspensions.

In areas in which revenue is levied in kind the results of indifferent seasons or calamities adjust themselves automatically, and the necessity for suspension or remission of revenue seldom arises. Where the revenue is paid in cash, the Political Agent may direct that the whole or part of the land revenue falling due in an estate be suspended in cases of severe and continued calamity. All orders thus issued must be at once reported for the sanction of the Revenue Commissioner, who may cancel or modify them. Similarly, proposals for remission of land revenue have to be reported to the Revenue Commissioner, who may sanction remissions up to a maximum of Rs. 250. Cases involving larger sums require the sanction of the Local Government. Remission of grazing-tax and of the tax on water-mills, are sometimes granted when there is unusual mortality due to a drought and scarcity of fodder, or when a mill has, owing to no fault on the part of the proprietor, not been in working order.

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Exemption of improvements from revenue.

In connection with the Settlement of the Quetta tahsíl, the Government of India ruled that under no circumstances should any additional amount of revenue be imposed during the period of the Settlement on account of any land newly cultivated, or of any *káréz* newly constructed within the estates subject to the fixed assessment, and it was subsequently decided that the period of exemption for all new *kárézes* should be ten years, to be reckoned from the time when the *káréz* began to give a fair supply or was practically completed. In exceptional cases the period may be extended to fifteen years. Cases of other new works of irrigation, such as brick-lined wells, artesian wells, *bands*, and water-channels are considered each on its merits. The same principles have been adopted in the estates under fixed assessments in Pishín and Shorarúd. In areas which are not subject to a fixed cash assessment, the rules are :—(*a*) that, when waste land is reclaimed with the aid of a takávi loan and is brought under cultivation, no revenue may be assessed on it until the expiration of three years, reckoned from the beginning of the harvest first reaped after the reclamation was effected. If no takávi loan was obtained, the period of exemption may be extended to four years. (*b*) When *khushkába* land has been improved by irrigation with the aid of a takávi loan, the period of exemption is four years; in the case of waste land which has been improved by irrigation or of an improvement, either of *khushkába* or waste, which has been made without the aid of a loan, the period of exemption may be extended to five years. In special cases these periods may be further prolonged.

Waste lands.

No final decision has yet been arrived at in regard to waste lands. Under Afghán rule, as already pointed out, the right to all waste lands was vested in the State. In the first draft of the proposed Land Revenue Regulation for Baluchistán, which is still (1905) under consideration, it was suggested that lands comprised in hills, forests and unclaimed or unoccupied waste were to be presumed to be the joint and common property of the land-owners; but there were numerous objections to this course, the most obvious being that it would be very difficult to determine which of the land-owners of adjoining villages should be considered to have this right, and how it should be limited, and that the collection of grazing-tax by Government from nomads might be jeopardised. In the draft Regulation finally submitted for approval, a provision has been included giving the presumptive right in all such land to Government.

Concessions for clearance of jungle, etc.

As already mentioned, waste land cleared of jungle and brought under cultivation is exempt from revenue for periods varying from 3 to 5 years. In giving takávi advances for irrigation works, a condition is generally imposed that a certain number of trees will be planted along the water channels.

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Restrictions against transfer of land to non-agriculturists.

From 1883 to 1891 an executive order was in force which required that no agricultural land should be transferred to aliens without the permission of the Agent to the Governor-General. This was, however, rescinded in 1892. Under the provisions of the Civil Justice Law and Regulation, agricultural land cannot be sold in execution of a decree without the sanction of the Local Government, and it is usually made a condition of the sale that the land shall not be sold to non-agriculturists. In the draft Land Revenue Regulation, a provision has been made that no agricultural right in land shall be alienated by transfer, sale, gift, mortgage or other private contract to any person who is not entered in a record of rights, as a member of the proprietary body of an estate, or, if the transferee is resident in a part of Baluchistán where no such record of rights has been prepared, unless the transferee is a Pathán or Baloch land-owner, and unless he is approved by the headmen of the village where the land is situated.

Government lands.

In the course of the Settlement of Pishín, twenty-two pieces of land, with a total acreage of 41,406, of which 7,170 acres were irrigable, were found to belong to Government. This property was an inheritance from the Afghán Government, but the irrigation had for the most part been introduced since the arrival of the British. The lands had all been acquired by the Afghán Government by confiscation, owing to the landowners declining the *gham* or assessment placed upon them. These lands are known as Tímúr Sháhi, from Tímúr Sháh the successor of Ahmad Sháh, and the principal areas are Chur Bádízai, Chur Kulálzai and the three Saréla villages in the Sarwésht circle. In most of them the tenants have been given occupancy rights and pay a fixed cash assessment, which includes the revenue and the rent. In others, revenue is levied by *batái* at rates varying from one-third to one-fifth.

In Quetta, the Government lands are (*a*) those within the limits of the cantonment which pay no revenue to the Civil department; (*b*) those assigned to the Quetta municipality; (*c*) the Mián Ghundi Khushkába; (*d*) land round the Hanna Bungalow; and (*e*) three *shabánas* of water with land in the villages of Tirkha Gurdit Singh, Karak and Samungli. The total area, excluding the land in the cantonment and municipal limits, is 1,937 acres, 2 roods and 4 poles, of which 1,490 acres are under cultivation. The Shahwánis, who cultivate the Mián Ghundi Khushkába, pay one-sixth of the produce, and the three *shabánas* in Tirkha, etc., are leased to *zamíndárs* on a fixed cash assessment.

In Chaman, the Government holds land which was purchased from the Achakzais in 1889, and half the water of

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the Sirki Tilérai* Káréz, the tenants of which pay revenue at one-third of the produce.

Water Mills.

The number of water-mills in each sub-division or tahsíl is shown in the following statement :—

Sub-division or Tahsíl.	Revenue free.	Revenue paying.
Chaman ...	...	25
Pishin ...	15	138
Quetta ...	8	68
Shorarúd ...	...	1
Total ...	23	232

In circles which were not under *gham-i-naukar* assessment in Pishín, a tax was levied by the Afgháns on water-mills, apparently on the ground that the water power was taxable. In the Settlement, an assessment of Rs. 687 per annum was imposed in seven circles; there were no mills in the Shádízai circle; those in Haidarzai and Gulistán were revenue-free; the five mills in the Ségi circle were not in working order; and the tax on water-mills in Barshor and Toba Kákari was included in the land-revenue assessment. There are three water-mills on the Shébo Canal which are farmed out annually by the Irrigation department, the revenue of which is credited to Irrigation.

In Chaman, the water-mills are included in the cash assessment. In Shorarúd, the only water-mill is assessed annually; while in Quetta, eight water-mills are exempt from assessment, sixteen pay a fixed assessment for the term of the Settlement, and the remainder are assessed annually, the basis of assessment being one-sixth of the receipts. The average annual assessment in the Quetta tahsíl per water-mill amounted to Rs. 19-11-7 during 1902-03.

Grazing-tax.

Grazing-tax was known in Afghánistán as *sar-rama*, and the rates levied by the Afgháns in Pishín and Shorarúd were one rupee for a camel; eight annas for a cow; six annas for a donkey; and one anna for a sheep or goat. Horses and plough oxen were excluded, and Saiads and persons under fixed land

*An account of this purchase will be found in the Miniature Gazetteer of Chaman Town.

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revenue assessment were exempt when grazing within their own tribal limits. These rates were at first maintained under British rule, but in June, 1890, they were modified to some extent, and the tax was imposed throughout the Agency except in the case of those who paid it as a part of their land revenue. The revised schedule was:—

Male camel ...	As.	8	0	Female camel	R.	1	0	0
Buffalo ...	"	8	0	Cattle ...	"	0	6	0
Donkey ...	"	4	0	Sheep or goat	"	0	1	0

Animals which are exempt include horses, *bona fide* plough bullocks, milch cows kept for private use by villagers, and camels, up to a maximum of 400, owned by the Ségi Taríns and used for ploughing.

In the case of the permanent inhabitants of the Chaman Sub-division, of the four *kárézes* under cash assessment in Shorarúd, and of the Barshor and Toba Kákari circles in Pishín grazing-tax is still included in the land revenue assessment. In the Lora Kákari, Kárézát-i-Kákari and Sarwésht circles of Pishín a lump assessment, amounting to Rs. 788-8 per annum for all three circles, is in force. Elsewhere the tax is collected at cash rates in accordance with the actual or estimated number of animals. Collections are carried out once a year by the tahsíl establishments, with the aid of the headmen, either by actual enumeration of the cattle or by temporary contracts (*ijára*). Headmen who assist are paid 5 per cent. on the collections as their remuneration. Collecting from nomads and flockowners is always attended with considerable difficulty; the most favourable time is the lambing season, when the flockowners are more or less stationary for ten days or a fortnight. The income derived from the grazing-tax collected throughout the District during 1902-03, an abnormally bad year, was as follows:—

From settled inhabitants ...	Rs.	1,348	3	0
From nomads	"	228	15	4
Total	Rs.	1,577	2	4

Grazing-tax is credited into the District accounts under Land Revenue, and the average collections of the quinquennial period, ending with March 31, 1902, show that the sum obtained from it amounts to about 7 per cent. of the total land revenue receipts.

Revenue-free grants in Quetta.

Thorough and exhaustive enquiries were made in the course of the Settlement regarding revenue-free holdings and revenue assignments in the Quetta tahsíl, and proposals were made by

the Revenue Commissioner in 1895, who classed the grants under the three following heads :— LAND REVENUE.

(*a*) Grants in favour of religious persons, such as Saiads, Pírs, Sáhibzádas and Fakírs.

(*b*) Grants in favour of influential persons, or those who had rendered good service to the British Government.

(*c*) Tribal grants to the Raisáni and Shahwáni tribes of Bráhuis.

The Government of India accepted these proposals in October 1898 with certain modifications, and the final total amounted to Rs. 15,206-15-8, classified under the following heads :—

CLASS.—	Rs.	A.	P.
I. Grants to be maintained in perpetuity ...	6,498	13	8
II. Grants sanctioned for the term of the Settlement and to be then resumed ...	1,886	1	11
III. Grants to be continued for the lives of the incumbents and to be then resumed	1,177	12	2
IV. Grants to be wholly revenue-free for the term of the Settlement, after which half assessment would be imposed	2,467	15	0
V. Grants sanctioned for the term of the Settlement, after which they would be reconsidered	1,656	15	7
VI. Grants sanctioned till the end of the Settlement or the death of the holder, whichever might occur first, after which they would be resumed ...	898	7	9
VII. Religious grants sanctioned for the term of the Settlement, after which their maintenance would be left to the option of the villagers	199	13	7
VIII. Grants to be continued in full for the lives of the holders, and at half rates for the lives of their successors, after which they would be resumed	421	0	0
Total Rs. ...	15,206	15	8

Important grants in Quetta. Kási grants.

Among the important assignments and revenue-free grants in Quetta, special mention may be made of those held by the Kási Arbábs, the Durránis, and the Raisáni Bráhuis.

In pre-British days the Kási *Arbábs* enjoyed certain

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proprietary rights in Bráhui and non-Kási *kárézes*, and were in the habit of taking either a small fixed assessment or a share of the produce, usually one-sixth, with the aid of which they paid their *zar-i-kalang* or fixed assessment to the Khán. They were deprived of this source of income in 1890 by the substitution of *batái* for *zar-i-kalang*, and, as a result of an enquiry which followed, it was decided in 1894 that the Kási headmen's rights in these *kárézes* should be abolished, but, as compensation for the sudden and serious change made in their position by the introduction of *batái*, Rs. 1,800 per annum was granted to them from 1894 as a perpetual *inám*. The distribution included Rs. 800 for the Akázais, to be divided equally between the *maliks* and *arbáb* of the Akázai village; Rs. 800 for the Ahmadkhánzai *arbáb*; and Rs. 200 for the *malik* of Baléli. The right of the Ahmadkhánzai *arbáb* was also recognised to construct water-mills on the right bank of the Lora, from the southern boundary of the Abdulla Káréz in the Ahmadkhánzai *mauza* to the Zangi Lora, and of the Akázai *arbáb* to construct mills from the Zangi Lora to the northern boundary of the Tirkha village.

Durráni grants.

The case of the Durránis owed its origin to a dispute between the Durránis of Kila Durráni and Kotwál, near Quetta, on the one side, and the Yásínzais on the other, about certain *kárézes* and lands watered by the Hanna stream. The Yásínzais were in actual possession of the land, and the dispute was settled by mutual agreement in July 1895. In the document then drawn up an equal division of the whole of the lands under the Hanna stream was agreed on, while, in the *káréz maháls*, the Durránis were admitted to be the superior proprietors and the Yásínzais to be the subordinate proprietors. This was the main point affecting Government interests. The Yásínzais were to pay the full Government revenue, the equivalent of half of which the Government agreed to make over to the Durránis as superior proprietors. This was done by remitting half the revenue payable by certain Durráni families, for the period of the Settlement, the annual value of the remission aggregating Rs. 1,867, and by granting a personal remission of the value of Rs. 225 for the lifetime of the head of the Durránis, Sardár Abdul Wáhid Khán. Almost all of the Kila Durráni lands have since been sold to the Military department and included in the Quetta cantonment, but the settlement made still holds good in the case of the lands situated in Kotwál. Shortly after this case had been decided, certain claims by Kila Durráni families to assignments in the Kuchlák circle of the Quetta tahsíl were investigated by the Revenue Commissioner, and, as a result, assignments of the annual value of Rs. 512 were allowed to two Durránis, named Dád Muhammad and Ján Muhammad, for their lifetime.

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Revenue-free grants in Pishin.

An enquiry of a very summary nature into the existing grants and assignments in Pishín was made by the Deputy Commissioner in 1890, and orders were passed in February 1891. When it was decided to proceed with the Settlement of Pishín, the Government of India laid down the principle that all proposed alienations of revenue in perpetuity, and all grants on favourable terms for longer periods than two lives, must be reported to them for sanction, when the area exceeded ten acres, while petty grants of ten acres and less, and grants for not more than two lives, might be sanctioned by the Agent to the Governor-General. In the course of the Settlement, a large number of grants and assignments came to light, and as finally sanctioned by the Government of India and the Local Government, they are tabulated below :—

Circle.	AREA.				No. of water-mills.	Estimated value.
	Irrigated area.	Dry crop.	Flood crop.	Unculturable.		
	Acres. R. P.	Acres. R. P.	A. R. P.	R. P.		Rs. A. P.
Haidarzai	1,308-3-27	1,544-0-37	......	...	...	1,447-9-6
Surkháb	905-1-5	934-2-34	......	...	8	944-13-4
Sarwésht	1,280-3-19	2,816-0-8	......	...	...	1,526-8-7
Band-i-Khushdil Khán	...	*47-3-4	......	...	...	5-15-7
Shébo Canal ...	...	*2,492-3-7	......	0-2-9	..	171-0-10
Alizai	4,119-1-30	10648-2-25	327-2-30	...	...	5231-11-0
Kila Abdulla ...	568-1-16	1,375-2-25	0-1-0	..	.	1011-13-6
Gulistán ...	3,767-2-1	4,562-2-23	......	...	5	9,964-0-0
Segi	...	...	......	...	...	......
Toba Kákari ...	733-1-30	1,265-1-34	21-3-16	...	...	245-8-5
Bárshor	98-0-34	26-0-17	......	...	...	65-15-9
Shádizai	...	45,843-2-39	......	...	...	4297-13-7
Kárézát-i-Kákari	252-0-14	69-1-4	......	...	...	210-3-6
Lora Kákari ...	102-3-25	250-1-35	......	...	...	148-15-0
Total ...	13,137-0-1	71,877-2-12	349-3-6	0-2-9	13	25,272-0-7

Out of the total number of 238 *muáfis* sanctioned, 95 were for the term of Settlement, 11 for the life of the present holders, 12 for more than one life, 2 for five years, and 118 in perpetuity. Most of the last named grants, which are held on the condition of private good behaviour as well as active public loyalty, consist of revenue-free lands held by Saiads. "These," wrote Mr. Colvin, "are for the most part ancestral revenue-free

* Any portion of these areas coming under irrigation from the Government canals is liable to assessment.

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holdings which were granted to the people and confirmed by previous Afghán Governments to Saiads in virtue of their alleged descent from Fátima, the daughter of the Prophet. The Saiad families in Pishín have long been held in veneration, and have been permitted by a custom, which all Muhammadan Governments respected, to hold their lands revenue-free from many generations prior to May, 1879, when by the treaty of Gandamak, Pishín became a British district. It was thought impolitic to interfere with these grants; and others, dating back to ancient times, which had been given for religious or pious purposes, were treated in the same way. In doubtful cases, the general principles followed were that when possession had been long and uninterrupted, i.e., for over 20 years, but the grant appeared to be unauthorised, or based on no religious or other special grounds, it was to be continued during the term of the Settlement, at the end of which it was to be regarded as liable to resumption. Grants which had been acquired without authority within the preceding 20 years, or of lands which had been abandoned by the owners under circumstances which indicated that they had no intention of returning, and portions of *gham-i-naukar* lands, which had been alienated to others free of revenue, were ordered to be resumed."

Transferees can only enjoy these grants on condition: (1) that they are members of the particular section or sub-section named in the original order granting the *muáfi*; (2) that they themselves or their fathers are hereditary co-sharers in the undivided (*shámlát*) property, if any, of such section or sub-section, situate in the place named in the *muáfi* grant; and (3) that they themselves or their fathers are in the enjoyment of a *muáfi* on other lands which are included in the *muáfi* grant to such section or sub-section.

Important grants in Pishín.

Besides the Saiad free holdings, the two most important grants are those which have been made to the two Achakzai families of Gulistán. In September, 1889, the Government of India sanctioned a *muáfi* of 12 *shabánaroz* in the Gulistán Kárez in perpetuity to Abdul Hamíd Khán and his brothers ($3\frac{3}{16}$ *shabánas*), Muhammad Umar Khán and Ghulám Haidar Khán ($2\frac{13}{16}$ *shabánas*), and to the four sons of Háji Sarbuland Khán (6 *shabánas*). Two of the sons of Háji Sarbuland Khán afterwards died, and two of them left the country for Afghánistán. In the course of the Settlement the grant was valued at Rs. 5,412-8, and it was decided that the shares of those who had left the country might be made over to those members of the family who had remained in Gulistán. The grant is now (1905) enjoyed by 27 persons, the principal among them being Abdul Hamíd Khán with his two brothers, the three sons of Abdul Majíd Khán, Khán Bahádur Ghulám Haidar Khán, and Muhammad Ali Khán, son of the late Khán Sáhib Lál Muhammad Khán.

The other grant consists of 6 *shabánas* and 4 *mázígar* in the Ináyat Ulláh Káréz, which is valued at Rs. 2,365-8, and is held by the Barkhurdár family, or descendants of Kashmír Khán, Achakzai, on whom the title of Barkhurdár was conferred by Ahmad Sháh, Durráni. At the beginning of the British rule revenue was levied for one or two years on these *shabánaroz*, but, when the principal members of the family returned from Kandahár, the lands were exempted from revenue. The shareholders have since multiplied, and they are not well off, and, in consideration of the influential position of the family and of their circumstances, the grant has been prolonged till the end of the present Settlement.

LAND REVENUE.

Finally, mention may be made of the grant of a house and garden to Khán Bahádur Qázi Jalál-ud-din Khán, C.I.E., an Afghán refugee who has served the British Government with distinction, on a nominal rent for a period of 99 years from January 1, 1901. The lease also gives the grantee certain rights to a portion of the civil share of water in Pishín. On January 1, 1903, the Qázi was further granted an assignment of the land revenue and proprietary rights in the Government village of Saréla, which covers about 686 acres of cultivable land, most of which is irrigable. The approximate value is Rs. 1,250 a year. The assignment of land revenue ceases on the Qázi's death, but the proprietary rights are to descend to his heirs.

In the Chaman Sub-division, there is only one grant of the annual value of Rs. 10, and there are no grants in Shorarúd, but the *káréz* at Kuram, made by Pír Sikandar Sháh, is exempt from payment of revenue until 1907.

Aggregate value of the revenue-free grants.

On March 31, 1903, the total annual value of the grants and assignments was Rs. 43,788, of which Rs. 26,237 were in perpetuity and Rs. 17,551 for a life or lives or for fixed terms. The total land revenue, excluding the arrears of previous years, but including the *haq-i-malikana* payable to the headmen, amounted during 1902-03 to Rs. 1,17,234, so that the annual value of the revenue-free holdings represents rather more than 37 per cent. of the land revenue.

Financial results.

The following table shows the financial results of the changes which have taken place, so far as the land revenue, which includes the tax on grazing and water-mills, is concerned, since the British occupation of Quetta-Pishín :—

[STATEMENT.

LAND REVENUE.

Tahsíl or Sub-division.	Revenue under native rule in year immediately preceding British occupation.		Revenue in first year of administration.		Revenue in year immediately preceding the introduction of cash assessment.		AVERAGE ANNUAL REVENUE FROM 1902 TO 1904.		
	Year.	Amount.	Year.	Amount.	Year.	Amount.	Land revenue from fixed cash assessment	From division of produce, miscellaneous, and grazing-tax.	Total.
		Rs.		Rs.		Rs.	Rs.	Rs.	Rs.
Chaman	...	...	...	...	1895-1896	6,600	4,072	962	5,034
Pishín	1877	...	1879-1880	66,248	1899-1900	69,834	53,825	18,168	71,993
Quetta	1878-79	22,973	1882-1883	26,919	1895-1896	62,112	50,920	10,185	61,105
Shorarúd	1878-79	500	1882-1883	1,201	1897-1898	2,339	1,218	489	1,707
Total ...	...	23,473	...	94,368	...	1,40,885	1,10,035	29,804	1,39,839

It will be seen from these figures that the introduction of cash assessments has resulted in a decrease, and not in an increase, of revenue, a further proof, if one were required, of the lightness of the assessment.

LAND REVENUE.

Apportionment of income to Irrigation Department.

The revenue from lands under the Shébo Canal and the Khushdil Khán Reservoir is collected in kind at the rate of one-third of the gross produce, and the whole of the net amount is credited to the Irrigation department. During the decennial period from 1892 to 1902, the average amount realised annually from both the schemes was Rs. 37,832, of which Rs. 21,368 were obtained from the Khushdil Khán Reservoir and Rs. 16,464 from the Shébo Canal. The Khushdil Khán Reservoir depends entirely on flood water and in years of drought it is almost empty. In 1902-03, which was an exceptionally dry year, the total irrigation revenue was Rs. 8,312, of which only Rs. 97 were obtained from lands under the Reservoir.

Record of rights and its maintenance.

The record of rights prepared in the Quetta and Pishín tahsíls comprises the *shajra*, or field map; *khasra*, or field index to the map; *shajra nasab*, or genealogical table of the proprietary body; *fard-i-taqsím-i-áb*, or list showing rights in water; *khatauni*, or list of holdings which shows all owners and co-sharers, and also tenants and mortgagees with possession; *fard-i-ásiáb*, or list of water-mills; *fard-i-muáfiyát*, or list of revenue-free and privileged holdings; *darkhást-i-málguzári*, or engagement for the revenue signed by the headmen; and the *khéwat*, or record of the shares and revenue responsibility of each owner or member of the proprietary body.

The subordinate revenue staff is required to keep this record up to date, and every patwári has to maintain for each of the *maháls* in his charge a harvest inspection register; a return of crops; a register of mutations; a yearly total of transfers; a statement of the revenue demand and of the persons from whom it is due; and a yearly register of area showing how every acre in each estate has been dealt with, i.e., whether it has been cultivated, left fallow, or newly broken up.

In issuing the rules for the maintenance of records in the Pishín tahsíl in November 1899, Mr. E. G. Colvin, Revenue Commissioner, desired that, as the village maps in the recent settlement had not, as a rule, been prepared field to field (*kishtwár*), but only in blocks of land of homogeneous character (*kismwár*), the plotting of the fields might be gradually carried out by the establishment employed in the maintenance of the record. This would, he pointed out, be among the most important duties of the patwarís, and the operation would require to be conducted with great care.

MISCELLANEOUS REVENUES.

Salt.

The method of manufacture of local earth salt has already been described in the section on Minerals. Punjab rock-salt, which is known as Láhori salt, pays duty at the mines, and is imported chiefly for use by the Indian population residing in the Quetta town and cantonment, bazars and military posts in the District. The indigenous population use Kachhi, Ségi or Zhob earth salt, and in Shorarúd, salt is obtained from tamarisk

MISCELLANEOUS REVENUES.

(*gaz*) bushes. The last two kinds are not taxed. The import of Kachhi salt into Quetta was permitted in 1887 on payment of a duty of eight annas a maund; the duty was raised to R. 1 in 1892, and to R. 1-8 in June, 1895, and formal orders were issued by Government in January, 1902, legalising the imposition of this duty in British Baluchistán and the Agency Territories. Duty was first imposed in January, 1895, at R. 1-8 per maund on the Ségi salt imported into the town of Quetta, and it was legalised in 1902, when a duty of one rupee per maund was also imposed on this salt on importation into the Pishín and Kila Abdulla bazars. Kachhi salt is imported on passes issued, after payment of duty, by the District authorities at Quetta; the duty on Ségi salt imported into Quetta is collected by the octroi establishment, and the right to collect the duty in Pishín and Kila Abdulla bazars is farmed annually by auction. The amount realised from taxation in 1902-03 was Rs. 1,271, and the quantities imported and consumed in Quetta town were as under:—

		Mds.	Srs.	Chs.
Kachhi salt	...	92	8	8
Ségi salt	...	254	15	0
Láhori salt	...	2,374	0	0

These figures give a consumption of 110·6 maunds per 1,000 of the urban population.

Opium.

The import, possession, and transfer of opium and poppy heads is governed by rules issued by the Local Government in 1898, under the Opium Act. The cultivation of poppy is prohibited, and the supply required for local consumption is imported from the Punjab, under pass, by licensed vendors, who make their own arrangements for procuring it. Such imports pay no duty.

The exclusive right of retailing opium, preparations of opium other than smoking preparations, and poppy heads for ordinary purposes, is disposed of annually at auction by the Political Agent, subject to the sanction of the Revenue Commissioner, the number of shops at which sale is permitted having been previously fixed. In 1902-03, the number of such shops was 7. Medical practitioners and druggists can obtain licences to sell opium, &c., in forms other than smoking preparations, and poppy heads, for medicinal purposes only, on payment of a fee of ten rupees per annum. Smoking preparations may not be bought or sold, and must be made up by the smoker from opium in his lawful possession, and then only to the extent of one tola at a time. The ordinary limits of private possession are three tolas of opium and its preparations (other than smoking preparations); and one seer

of poppy heads. In 1902-03, the consumption of opium amounted to 10 maunds, 30 seers and 9 chittacks and of poppy heads 25 seers 1 chittack. The revenue realized was Rs. 9,350.

MISCELLANEOUS REVENUES.

Intoxicating drugs.

Besides opium, the intoxicating or hemp drugs, which are controlled by regulations, are *gánja*, *charas* and *bhang*. Prior to the time of the Hemp Drugs Commission, the only restriction imposed was to farm out, by annual auction, the monopoly of the vend of these drugs at shops sanctioned by the Political Agent. The local cultivation of the hemp plant existed, to a very small extent, in one or two villages, but it was stopped in 1896. The number of licensed shops has recently been reduced to 7 (1902-03), and the contracts for retail and wholesale vend have been separated. The ordinary source of supply of *gánja* and *bhang* is Sind, and that of *charas* the Punjab, but *bhang* and *charas* are also imported to a small extent from Kalát and Afghánistán. In February, 1902, revised rules were issued, under which the farmers are permitted to import the drugs from other British Provinces in bond; when so imported, these drugs are stored in a bonded warehouse established at Sibi, where small fees are levied and issues to licensed vendors are taxed. The ordinary rates of duty on drugs imported from British territory are Rs. 4 per seer on *gánja*, Rs. 80 per maund on *charas*, and Rs. 4 per maund on *bhang*; but imports from foreign territory are taxed at double rates. The contracts for the right to sell the drugs, both by retail and wholesale, are sold annually by auction by the Political Agent, subject to the sanction of the Revenue Commissioner. The ordinary limit of private possession is one seer in the case of *bhang*, and five tolas in the case of *gánja* and *charas*. The consumption in 1902-03 was: *gánja* 6 seers 8 chittacks, *charas* 13 maunds, 29 seers and 10 chittacks, and *bhang* 21 maunds, 19 seers and 4 chittacks, and the revenue amounted to Rs. 8,441.

Country spirits and rum.

The manufacture and vend of country spirits are combined under a monopoly system. The right to manufacture and sell country liquors, including rum, is farmed annually by auction, the number of shops at which liquor is to be sold by the farmer or his agent being fixed previously. The number of such shops in 1902-03, was 20. No more than one seer of country liquor can be sold to any one person at a time, except with the permission in writing of an Excise officer authorised on this behalf by the Political Agent. No minimum price is imposed, nor has the liquor to be of any specified strength. The revenue in 1902-03 from country spirits including beer was Rs. 75,325.

Distillation of country liquor.

A distillery has been provided by Government in Quetta, in which country liquor is distilled by the contractor who obtains the farm. The principal still is of the "worm-still" type, water for the condenser being raised by a hand pump from a

MISCELLANEOUS REVENUES.

well. The still and the buildings are kept in repair by Government, but everything else is found by the contractor. Two small pot stills are provided by the contractor in which specially flavoured liquor is occasionally prepared. The materials ordinarily used are molasses (*gur*) and *kikar* or *babúl* bark, both of which are imported from Sukkur in Sind, the former at a cost of about Rs. 4 and the latter at a cost of about Rs. 3 per maund. When preparing for fermentation, about 2 maunds of *gur* are mixed with 10 seers of bark and 4 maunds of water in casks, the "wash" being ready for use in about 12 days in summer and in about 16 days in winter. Liquor of low strength, obtained from the first distillation of 6 hours, is called *kacha* or *chirakh*. This *chirakh*, after a second distillation lasting for about 12 hours, is known as *kora doátsha*. It costs R. 1-2 per quart bottle, and is that usually consumed. Flavoured liquors are prepared by the addition of spices such as *iláchi* (cardamum), *turanj* (citron), *guláb* (rose leaves), *saunf* (aniseed), *sund* (dry ginger), and *gazara* or carrot seeds.

Foreign liquors.

Foreign liquors, which term includes liquors other than rum manufactured in other parts of India and imported into the District, are sold under wholesale and retail licences, which are granted by the Political Agent on payment of fixed fees. These amount to Rs. 32 per annum for wholesale licences, and vary from Rs. 100 to Rs. 300 per annum for ordinary retail shops. There are also hotel, refreshment room, and dák bungalow licences, and in the case of ordinary shops, opened at places where the sale of liquor is small and likely to continue for a short time only, a licence may be given at a reduced fee fixed at the discretion of the Political Agent. The most important conditions of retail licences are, that no quantity of liquor greater than two imperial gallons, or twelve quart bottles, or less than one bottle, shall be sold to any one person at one time, and that no spirituous liquor, except spirits of wine and methylated spirits, shall be sold for less than R. 1-8 per bottle. The latter provision is mainly intended to safeguard the revenue derived from country spirits. During 1902-03, 6 wholesale and 9 retail licences were issued, and the fees amounted to Rs. 1,837.

Methylated spirits.

The import, possession, and sale of methylated spirits is controlled by rules issued by the Revenue Commissioner in December 1900, and no fees are charged for licences. In 1902-03, 7 licences were issued.

Beer.

Dealings with the Quetta branch of the Murree Brewery Company, Limited, at Kiráni are governed by rules contained in the Agent to the Governor-General's Notification, No. 4,775, dated the 22nd July, 1891. The malt liquors manufactured in the brewery and supplied under contract to the Commissariat department for the use of the European troops in Quetta were

exempt from taxation up to 1897, but from January 1, 1898 a duty of one anna per gallon has been levied. The brewery obtains a wholesale licence and a retail licence for Quetta at Rs. 32 and Rs. 100 respectively. The output of the brewery in 1903 was 347,220 gallons, of which 211,851 gallons were supplied to the Commissariat department; a sum of Rs. 17,254-12-6 was levied as duty in 1902-03.

MISCELLANEOUS REVENUES.

Consumers, consumption and aggregate revenue.

The consumption of opium, intoxicating drugs and liquors is chiefly confined to the Indian population, both civil and military, residing in the Cantonment and bazars, but *bhang* and *charas* are also used to some extent by Hazáras and Kandaháris and by the mendicants found in the District. The indigenous population has neither the means nor the inclination to consume excisable articles. A tendency is observable among Punjábis of all classes to prefer foreign liquors to country spirits, but, among Sindis and the working classes from the United Provinces, preference is still given to the latter. The large revenue from liquor indicates that the high wages paid in the District leave the earners a considerable surplus for investment in drink.

District Table XX., Vol. B, contains details of the consumption of, and revenue from, the principal articles. In 1902-03 the consumption per thousand of the entire population was $3\frac{3}{4}$ seers of opium and $7\frac{1}{2}$ seers of *bhang*; per thousand of the population of the places in which shops are ordinarily located, it was $13\frac{3}{4}$ seers of opium and $27\frac{7}{16}$ seers of *bhang*. The revenue, except from the duty on beer, shows a considerable decrease during the last 14 years, the chief reason being the completion of large works on which many workmen from India were engaged. In 1902-03, the total revenue, excluding the duty on beer, had fallen to Rs. 77,698 from Rs. 88,108 realised in 1889-90, but it has since shown an upward tendency.

Sales to European soldiers.

To guard against the sale of country and European liquors to soldiers, a provision is inserted in all licence forms forbidding the sale of liquor to a European soldier or non-commissioned officer, without the express permission of his Commanding officer, or to a native, if there is reason to believe that it is intended for European soldiers. Sections 13 and 14 of the Cantonment Act (XIII of 1889), which make the supply of liquor to European soldiers without permission punishable, have also been extended to an area of six miles radius round the Quetta cantonment, by the Agent to the Governor-General's Notification, No. 11,340, dated the 27th December 1900.

Stamps.

The Indian Stamps and Court Fees Acts and the rules made under them are in force. Licences for the sale of judicial and non-judicial stamps are issued by the Political Agent to petition-writers and others, who obtain their supply from the treasury

MISCELLANEOUS REVENUES.

at Quetta or sub-treasury at Pishín, and are paid commission at rates varying from $\frac{25}{32}$ per cent. to $6\frac{1}{4}$ per cent. on different kinds of stamps. A local depôt for the sale of stamps, in charge of the Native Assistant, was established at Chaman in 1896. In March 1903, there were 25 licensed vendors in the District. The average annual receipts, excluding fines, between 1897-98 and 1900-01 were Rs. 43,319, of which judicial stamps realised Rs. 29,929 and non-judicial stamps Rs. 13,390, while in 1902-03 the receipts from judicial stamps amounted to Rs. 26,784 and from non-judicial stamps to Rs. 17,928.

Income-tax.

The Income-tax Act (II of 1886) has not yet been applied to Baluchistán, but the tax is levied on the salaries of Government servants, by deduction from their pay bills; on the salaries of officers paid from municipal and local Funds; and on rewards paid to military officers for passing examinations in Oriental languages. The receipts between 1897-98 and 1900-01 averaged Rs. 2,430 per annum and rose to Rs. 2,866 in 1902-03.

LOCAL FUNDS.

Pishín Bazar Fund.

Besides the municipal and cantonment funds of Quetta town, which are described in the article on that place, the only local fund in the District is the Pishín sadar and District bazar fund, which was formed in 1884 and declared to be an excluded local fund in 1890. The fund is governed by rules issued by the Government of India in February 1900, as modified in April 1902. The Political Agent is the administrator and controlling officer of the fund, and the Revenue Commissioner has the powers of a Local Government. The Native Assistant at Chaman, and the Extra Assistant Commissioner, Pishín, are responsible for the collection of revenue, and incur expenditure under the sanction of the Political Agent.

The following are the principal sources of revenue. (*a*) Octroi, which is levied in the Pishín and Chaman bazars according to a schedule of rates which is sanctioned by the Local Government. The right to collect the tax at Pishín is farmed annually by auction, while the collections at Chaman are made by a special establishment. Care is taken that the tax does not degenerate into a transit due. (*b*) Conservancy and *chaukídári* cess imposed at rates varying from six annas per house to Rs. 3 per shop at Pishín, Chaman, Shélabágh, Kila Abdulla, Gulistán and Saranán bazars. (*c*) Public gardens and lands and rents of buildings and sites. (*d*) Contributions paid by the Provincial revenues towards education. One-third of the net receipts from the octroi at Chaman is paid to the military authorities for the conservancy arrangements of the Military station.

The funds are expended on objects of public utility in the places from which the revenue is raised. The chief items of expenditure are those on establishments for tax collecting, conservancy, and watch and ward; the maintenance of gardens and roads, and arboriculture; contributions towards medical

institutions; and the maintenance of village schools with the aid given by Provincial revenues.

MISCELLANEOUS REVENUES.

The fund possesses a caravan *serai* at New Chaman, an enclosure for *káfilas* at Old Chaman, and has contributed Rs. 23,266 towards the Chaman water-supply. During the first year of its existence, i.e., 1884-85, the revenue amounted to Rs. 6,905 and the expenditure to Rs. 6,539; in the quinquennial period of 1897-98 to 1901-02 the average annual income was Rs. 52,535 and the average expenditure Rs. 49,258; while during 1902-03 the receipts amounted to Rs. 33,698. In this year octroi contributed over 62 per cent. of the total revenue, and the expenditure on education was 8·2 per cent. The decrease of income in 1902-03 was due to smaller receipts from octroi, and also to the discontinuance of the previous practice of showing the grants or contributions, which are paid towards education in the Quetta tahsíl by the Provincial revenues and the Quetta municipal fund, as contributions to the bazar fund. Details of both income and expenditure are given in table XXI., Vol. B. The income and expenditure has varied with the number and size of the bazars, about which Mr. (now Sir Arthur) Martindale, then Political Agent, Quetta-Pishín wrote in 1888: "These bazars are of an ephemeral nature, springing up and increasing with the commencement and growth of the large works undertaken, and absolutely vanishing in most cases with their completion." With the closing of large works, however, and the gradual development of the District the income has exhibited a tendency to become fairly stationary.

PUBLIC WORKS.

Important civil works in the District are carried out by the Officers of the Military Works Service. The Sub-Commanding Royal Engineer of the Quetta Sub-district exercises general control, and has under him two Garrison Engineers with head quarters at Quetta. The civil works in the Quetta town, at Girdi Taláo, and in Shorarúd are under the Garrison Engineer, Quetta, who has a Sub-divisional Officer in subordinate charge, while those in the Quetta, Pishín and Chaman Sub-divisions are under the Garrison Engineer, Pishín, the official in subordinate charge being his Sub-divisional Officer at Chaman.

Civil works which cost Rs. 1,000 and over are provided for in the Public Works budget, and are generally carried out by the Military Works Services. Works of a petty nature and those required in places remote from head quarters, are executed under the orders of the Political Agent. They are supervised by the Municipal Secretary of Quetta, who is *ex officio* District Engineer, and who is assisted for this purpose by an Overseer paid from the Provincial revenues.

A special Irrigation Engineer, with his head quarters at Quetta, advises the Local Government in all irrigation matters,

PUBLIC WORKS.

and is also in charge of the Shébo Canal and Khushdil Khán Reservoir. For the latter he has under him an Overseer and a *Zilladár*.

An Overseer, paid from Civil funds, is also employed for the inspection of the coal mines in the District and elsewhere.

Important Works.

Reference will be found in the section on Means of Communication to the Railways and principal roads, and a separate account has been given, in the section on Irrigation, of the SHEBO CANAL AND KHUSHDIL KHAN RESERVOIR, and of the Quetta Water Works in the article on QUETTA TOWN. Excluding the extensive buildings in the cantonments, other works deserving notice are the following :—

Work.	Year when completed.	Approximate cost.
	Quetta.	
Residency	1894 ...	Rs. 1,94,495
Darbár Hall	1884 and 1895...	" 92,539
District Offices	1895 and 1900...	" 1,97,379
Revenue and Judicial Commissioner's Office ...	1899 ...	" 31,320
Civil Hospital ...	1885 ...	" 43,721
Police Lines	1884-1902 ...	" 63,627
Post Office	1892-93 ...	" 29,439
St. Mary's Church ...	1892 ...	" 2,79,519
Roman Catholic Church...	1898-99 ...	" 1,00,880
Telegraph Office ...	1905 ...	" *46,641
	Pishin.	
Circuit House	1886 ...	" 31,667
Irrigation Bungalow and Rest House	1891 ...	" 13,321
Tahsíl and Thána buildings	1886 ...	" 63,289
Levy Lines	1886-87 ...	" 46,119
Civil Dispensary ...	1887 ...	" 7,272
	Chaman.	
Political Rest House ...	1888 ...	" 9,134
Dák Bungalow	1890-91 ...	" 10,503
Native Assistant's Court.	1894-95 ...	" 12,923
Police Lines	1889 and 91-92...	" 10,761
Levy Lines	1898-99 ...	" 8,185
	Kila Abdulla.	
Caravan Serai	1886 ...	" 56,071

* This is the estimated cost.

The Forts built by the military at Pishín, Gulistán and Kila Abdulla have now been handed over to the District authorities. Rest Houses have been provided at Khánai, Khánozai, Mullázai, Gandak, Saranán, Khushdil Khán Band, Ségi, Girdi Taláo and Panjpái, and levy posts at Sábúra and Dobandi in Toba, and at Kuram in Shorarúd, the last-named having been built by civil agency. PUBLIC WORKS.

Quetta is the headquarter station of the fourth division of the Western Army Corps. The station itself was temporarily occupied in 1839, and was evacuated on the conclusion of the first Afghán war, in 1842. In 1876 a treaty was concluded with the Khán of Kalát, the sixth clause of which provided that troops might be stationed in Kalát territory to keep the peace, and Quetta was selected as a station for troops on account of its strong strategic advantages, commanding, as it does, some of the most important trade routes from Afghánistán and Central Asia to India. The first troops located here were the three companies of the 4th Sikh infantry (Punjab Frontier Force), which formed an escort to Major (the late Sir Robert) Sandeman. Early in March 1877, a small detachment of British troops marched to Quetta, and, in consequence of a fanatical outrage on Lieut. Hewson, R.E., the *míri* or fort, which is now the site of the arsenal, was occupied in July of that year. On the outbreak of the second Afghán war, in 1878, Quetta was used as a base of operations, its garrison forming part of the second division of the Kandahár Field Force, and troops were about the same time located at Khushdil Khán, Gulistán, Kila Abdulla, and Old Chaman or Chaman Chauki. After the conclusion of the war, the troops were moved from Old Chaman, which was handed over to Achakzai levies, and the garrison of Quetta was reduced in 1882. In 1883, it was decided to concentrate the regular troops in a central place in the Pishín valley, and the outposts at Khushdil Khán and Gulistán were vacated in June, the troops being established at New Bazar, now known as Pishín. On the extension of the railway northward from Bostán, Chaman and Gulistán were re-occupied from 1887 to 1890, while Shélabágh and Spinawana were occupied and a Military station established at New Chaman in 1889. The status of the Military District of Quetta had been raised from a second to a first class District in the preceding year. The detachment at Kila Abdulla was moved in 1893, and the last regiment to occupy the fort at Pishín, the 13th Infantry, evacuated the place on April 28, 1903, leaving a detachment of 29 Rifles for a treasury guard. The ordinary garrison of the places now occupied is as under (1905):— ARMY.

Quetta—3 British mountain batteries.
2 companies royal garrison artillery.

ARMY.

Quetta—2 British infantry battalions.
1 native cavalry regiment.
1 company sappers and miners.
4 native infantry regiments.
2 mule corps.
2 camel corps.
Chaman—1 native infantry battalion, detachment native cavalry.
Spinawana—Detachment native infantry.
Shélabágh—Detachment native infantry.

An account of the Indian Staff College which is now (1905) in course of erection will be found in the article on Quetta Town.

Volunteers.

The importance of a Volunteer Corps and of training in military duties in the wild border land of the Baluchistán Agency was early recognised, and in March 1883, the Government of India sanctioned the formation of the Baluchistán Volunteer Rifle Corps, with its head quarters at Quetta, and placed it under the orders of the Agent to the Governor-General for purposes of administration. The first Honorary Colonel of the corps was Sir Robert Sandeman, and the first Commandant was Major Mosley. A special feature of the corps in its early years was the admission to its ranks of natives of India, but, except Pársis, they were excluded in 1885-86, for want of interest in drill. The strength of the corps was in consequence much reduced, but the extension of the railway to Quetta soon improved matters, and volunteering in Baluchistán once more became popular. Many men who were engaged on the construction of the line joined the corps, and, by the close of 1886, it had attained considerable strength. On the completion of the construction of the railway, and the permanent location of railway officials at Quetta and other stations, the limits of recruitment for the 3rd Punjab (now the North-Western Railway) Volunteer Corps were extended to Baluchistán during 1887-88, and the local Volunteer corps was so much crippled thereby that it became a question whether one or other of the two corps should not cease to exist as a distinct body. By the close of the year, the local corps had dwindled in numbers to such an extent that only 11 members were present at the annual inspection in January 1888. But the fortunes of the corps, which had reached so low an ebb, now turned, and the number of members has since gradually increased from 63 in 1891 to 122 in 1901.

In 1902 the corps was remodelled and formed into two companies, with mounted infantry, cyclist and cadet sections, under Major A. H. McMahon, then Revenue Commissioner, as Commandant, and the strength went up to 162 in 1903. Of

these, 125 were infantry, 12 horsemen and 25 cyclists. In 1903 there were also 70 men serving in the North-Western Railway Corps within the limits of Baluchistán, most of whom were stationed at Quetta.

ARMY.

The possession by Volunteers of a knowledge of gun-drill in a place so strongly fortified as Quetta is naturally of the greatest importance, and instruction in gun-drill has been carried out since 1900. The corps now (1904) possesses a detachment of ten men who are thoroughly efficient in this branch, and other members are being trained. The whole corps has lately been armed with the ·303 rifle.

Volunteer Institute.

A drill hall and institute was built for the corps at Quetta in 1892, from funds raised by subscription, which were subsequently supplemented by a Government grant of Rs. 1,800. This hall has, however, been found inadequate for the wants of the corps, and a commodious institute on a better site has now been completed (1905). The cost was estimated at Rs. 12,000, towards which the Government of India has sanctioned a grant of Rs. 6,000, and, for the remainder, a loan of Rs. 6,000 bearing interest at Rs. 4 per cent. per annum, the condition being that the loan shall be repaid in ten years from the annual capitation grant of the corps, in annual instalments of Rs. 739-12 on account of capital and interest. The building is mortgaged to the State until the loan is repaid.

LEVIES.

Between 1877 and 1882, payments for tribal services were sanctioned for the protection of various passes, the telegraph lines, and for carrying the post. At this time a number of isolated posts were garrisoned by small detachments of regular troops, a system which the military authorities were anxious to abolish. With this object a committee assembled at Quetta in 1883, under the presidency of Sir Robert Sandeman, to consider the revision and redistribution of the levy services. Besides recommending the withdrawal of regular troops from several posts and their occupation by levies, the committee laid down certain general principles for future guidance. They drew a sharp line between active and pensioned service, and decided that all persons drawing pay, whether chiefs or others, who were not pensioners, must render an equivalent in service. Levies, they also considered, should be local, and tribal responsibility enforced. The chiefs nominating and the men nominated should, as a rule, belong to the immediate neighbourhood of the post in which they were employed. These principles are still the backbone of the levy system. Under it service is given to chiefs or headmen in localities where they have influence and they can nominate their own men, subject to confirmation by the Political Agent or by the officer in charge of a subdivision. A nominee of a chief or headman may be rejected

LEVIES. on the score of physical unfitness, bad character or other sufficient cause. The men bring their own weapons of some sort, and the sowars their own mount, the latter being subject to approval. When it is remembered that the levies execute the duties which are ordinarily allotted to police in India, in all the outlying parts of the District, and maintain peace and order, the importance of judicious selections to fill vacancies in the District levy service will be obvious.

At the time when the committee of 1883 met, the services in the Quetta-Pishín District cost Rs. 7,501 per mensem, and comprised a telegraph service costing Rs. 3,034, a postal service costing Rs. 2,297, and a service from Afghán tribes costing Rs. 2,170. Detachments of the Baloch Guide Corps, a relic of the days when affairs on the Baloch border were managed by the Superintendent of the Upper Sind Frontier, were also located at Quetta and Sariáb.

The telegraph service was now abolished as a separate service, except on the Quetta-Kalát line, and the services were revised and redistributed among the following heads:—

		Rs.	A.	P.
(a)	Tribal services	1,534	0	0
(b)	Local posts	3,985	0	0
(c)	Revenue levies	370	0	0
(d)	Achakzai services	2,004	0	0
(e)	Miscellaneous payments	440	0	0
(f)	District postal service	1,230	0	0
(g)	Kalát postal and telegraph service	553	5	4
	Total Rs.	10,116	5	4

Under this scheme several posts along important lines of communication and on the border were manned by the levies, and services were for the first time sanctioned for Barshor and Shorarúd. The Baloch Guide Corps was disbanded, and certain posts in the Quetta-Pishín District were placed under the Superintendent of Levies. These were the head quarter levies at Quetta, costing Rs. 925; the Gulistán levies, costing Rs. 545; the Khushdil Khán levies, costing Rs. 485; the New Kárez post, costing Rs. 130; and a post at Quetta, costing Rs. 250 per mensem. At this time also a strong post of levies was located at Pishín.

The appointment of Superintendent of Levies was abolished in 1886, and the posts under his control were transferred to the Political Agent, with the exception of the Quetta head quarter levies. The latter compose the Agent to the Governor-General's escort, which is still known in common parlance as the Baloch Guide, and are under the supervision of the Second Assistant to the Agent to the Governor-General. In 1905

LEVIES.

they consisted of 2 risáldárs, 2 jemadárs, 1 daffadár, 1 clerk and 21 sowars.

With the completion of the railway, the postal levies in the District were all abolished, the last line, between Khánai and Hindubágh, ceasing in 1900, and the Quetta Kalát postal and telegraph service was transferred to the Political Agent, Kalát.

In 1889 another committee assembled to consider the working of the levies and police, and the outcome of their deliberations was the sanction by the Government of India to the provincialisation of both services. The Levy system in the Distict was revised in 1890, and owing to the partial failure of revenues in Zhob, reductions were made in 1895. The whole service was again revised in 1903. The total strength of the levies in June 1905 was 489, consisting of 115 headmen and officers, 139 sowars, 215 footmen and 20 clerks and menials. Their monthly sanctioned cost is Rs. 8,915, and they are distributed in 42 posts, the details of which are shown in table XXII, Vol. B. The levies are now employed not only in guarding passes and roads, but in the investigation and detection of crime in places other than cantonments and large bazars, on escort duty, in crop-watching, and in the duties carried out by process servers in India.

The Achakzai service.

One of the most important services in the District, and one which has undergone various changes, is that of the Achakzais. Exclusive of rations and forage allowance to sowars this service cost Rs. 2,057 per mensem in 1882, and comprised 16 officers, who were known respectively as *sad-báshi* (commander of 100 men), *panjáh-báshis* (commanders of 50), *dah-báshis* (commanders of 10), and jemadárs, 22 sowars and 96 footmen, all under Háji Sarbuland Khán, who was himself in receipt of a monthly allowance of Rs. 300. The titles of the officers were borrowed from the Afgháns, and that of *panjáh-báshi* is still (1905) retained. In 1883, Háji Sarbuland Khán resigned and was replaced by his nephew, Abdul Hamíd Khán, who, with the help of his brother, Abdul Majíd Khán,† managed the Achakzai service up to 1886. In 1887-88, the state of affairs became unsatisfactory, in consequence of which it was decided in 1889 to work the Achakzai services through the headmen of various sections. Ghulám Haidar Khán and Lál Muhammad Khán* were at the same time placed in charge of the posts. The pay of Abdul Hamíd Khán was temporarily stopped, and was subsequently reduced to Rs. 100. A levy post, at a cost of Rs. 340 per mensem, was sanctioned for New

* Khán Sáhib, Lál Muhammad Khán, died on June 19, 1903.

† Khán Sáhib, Abdul Majíd Khán, died on November 20, 1901.

LEVIES.

Chaman, and the total cost of the Achakzai service was raised to Rs. 2,344 per mensem.

On the extension of the railway to New Chaman, affairs were again found to be unsatisfactory, and, to check interference by Afghán officials, a post of 38 men was temporarily established under Ghulám Haidar Khán at Jilga, but it was eventually located, in October 1892, at Dobandi. A small post of 18 men, originally located at Biánzai in 1893, was afterwards moved to Sara Karúna and finally to Bahlolawar. The Achakzai service now (1904) consists of 29 headmen, including Ghulám Haidar Khán, who is an Honorary Magistrate of the third class and holds the title of Khán Bahádur, and Muhammad Hasan Khán of Inayat Ullah Káréz, for whom an allowance of Rs. 60 per mensem was sanctioned in September 1900, two *panjáh-báshis*, 21 jemadárs, 21 sowars, 121 footmen and 5 clerks and menials, and costs Rs. 3,252 per mensem. These men are distributed into 14 posts, and guard the border from Bahlolawar to Wucha Darra. Khán Bahádur Ghulám Haidar Khán under the supervision of the Native Assistant, Chaman, is in charge of the Achakzai levies stationed at Bahlolawar, Dobandi, New Chaman, Old Chaman, Sanzala, Shélabágh, Shamsi Khán, Roghánai, Ghwazha, and Spínatízha, while those at Salad Arambi, Kila Abdulla Khán, and Gulistán are under the orders of the Extra Assistant Commissioner, Pishín.

Rustamzai service.

For services rendered during the second Afghán war, a sum of Rs. 200 per mensem was granted to the head of the Rustamzai clan of the Raisáni tribe of Bráhuis, whose head quarters are at Kahnak in Kalát, and was included in the Pishín service. It was temporarily stopped in 1887, but was revived in 1889, since when it has been continued. In 1900, the Rustamzais were also placed in charge of the Kuram levy post, the strength of which consists of 2 jemadárs, 10 sowars and 6 footmen, with a *munshi* and a sweeper. It was established at Kuram Káréz in Shorarúd, as a consequence of the outrage at the Kiráni brewery and of raids committed from across the border in the preceding year.

Allowances to Kiráni Saiads.

Owing to their great sanctity and influence among the local tribesmen, allowances aggregating Rs. 130 per mensem were sanctioned, apparently about 1878, for Saiad Aurang Sháh and four other Saiads of Kiráni. Saiads Samandar Sháh and Jahán Sháh died in November 1889, when their allowances were discontinued for a time. That payable to Aurang Sháh, viz., Rs. 50, has been continued to his son, Saiad Bahár Sháh, and has been paid through the Political Agent, Kalát, since October 1899. The question of the distribution of the remaining Rs. 80 was referred to a *jirga* in September 1890, and, as a result of its recommendation, the payment of Rs. 45 was sanctioned to

certain members of the Ata Ullah Sháhzai family, and of Rs. 35 to the Amín Ullah Sháhzai family.

LEVIES.

Service of Saiad Muhammad Hasan, Shínghari.

Up to 1887 Saiad Muhammad Hasan, Shínghari of Pishín, a nephew of Saiad Núr Muhammad, who was for many years Prime Minister of the Amír Shér Ali, was in receipt of a monthly allowance of Rs. 300 from the Pishín levy service, as a jemadár with 8 sowars, but only 4 sowars were actually employed. In the year named, the Government of India sanctioned the commutation of this service into a life pension of Rs. 800 per annum, subject to the condition of loyalty and good behaviour and of his residing and continuing to hold property in Pishín. He was also allowed to retain a levy service of Rs. 100, consisting of Rs. 40 paid to his brother as jemadár and Rs. 60 to three sowars.

Ghilzai refugees.

An allowance of Rs. 60 per mensem is paid to Pír Muhammad Khán, and of Rs. 30 per mensem to Núr Muhammad Khán, Ghilzai refugees, under sanction of the Government of India, accorded in January 1899.

Trans-border posts.

The Amír of Afghánistán holds the posts given in the following statement, along the border of the District (1904). The disparity between the number of men employed on the two sides of the frontier is remarkable. Most of the Afghán *khásadárs* are employed in preventing the smuggling of merchandise into British territory, and the posts which they occupy are located, so far as possible, on the tracks followed by caravans.

[STATEMENT.

LEVIES.

British Levy posts, with strength.	Afghán posts opposite British posts, with strength.	Approximate distance of Afghán from British posts.
Bahlolawar, 8 levies...	Shádi Khák 44 men.	
	Kalaka, Sherghashlún } 23 ,,	14 miles.
Dobandi, 29 ,, ...	Shinglún 11 ,,	28 ,,
	Lakarai 22 ,,	22 ,,
	Wanakka 22 ,,	16 ,,
	Kár 23 ,,	16 ,,
	Waléwar 11 ,,	3 ,,
	Manáwar 13 ,,	5 ,,
	Tor-kats 34 ,,	16 ,,
	Sohi 11 ,,	16 ,,
	Jilga 22 ,,	
	Báisa 11 ,,	
New Chaman, native infantry regiment, detachment native cavalry, 23 levies, 10 police ...	Ismail Cháh 17 ,,	6 ,,
	Kajír Cháh 13 ,,	6 ,,
	Mullá Saiad Cháh 11 ,,	6 ,,
	Kila Boldak 69 ,,	7 ,,
	Khairo Kili 11 ,,	7 ,,
	Shéro Obo 11 ,,	10 ,,
	Chágai 22 ,,	12 ,,
	Pusha 22 ,,	25 ,,
Sanzala, 4 levies ...	Mír Afzal Cháh 11 ,,	15 ,,
	Muríz Cháh 11 ,,	18 ,,
Roghánai, 7 ,, ...	Néko Cháh 11 ,,	18 ,,
Spínatízha, 6 ,, ...	Iskám Kánr 55 ,,	14 ,,
	Kaunchi 25 ,,	26 ,,
Ghwazha, 7 ,, ...	Sra Chahán 34 ,,	4 ,,
	Shakari Cháh 11 ,,	10 ,,
	Shínki Khora 11 ,,	1 ,,
Shorarúd border, a post at Kuram and another post at Panjpái (4 men). } 19 men.	Spína Khulla 10 ,,	
	Tang Shorá-wak 10 ,,	
	Ushtar Lak 10 ,,	
	Salwatu 10 ,,	
	Torkai 10 or 12 men.	

POLICE.

A police force was sanctioned for Quetta and Pishín in 1879, and in 1882 it consisted of one inspector, two deputy inspectors, 67 sowars, 10 sergeants and 212 constables, besides 20 men paid from the Quetta revenues. At this time the pay of the different grades varied in different parts of the Agency, and the question of placing them on a uniform footing was taken up by the committee already referred to, which assembled in 1883 to consider the revision of the levy services. The revised strength of the police recommended by the committee and sanctioned by Government comprised one inspector on Rs. 200, one deputy inspector, 7 daffadárs, 3 *munshis* and court inspectors, 57 sowars, 16 sergeants, 170 constables and 4 menials, and the total monthly cost, including compensation for dearness of provisions and clothing allowance, was Rs. 5,071. In 1886 the Police force of the District consisted of 270 men of all grades and cost Rs. 5,297 per mensem, including ration money and clothing allowances, and it was placed in charge of Mr. R. C. Plowden, Assistant District Superintendent Police, who was on deputation in the Bolán Pass. A small body of police was at the same time sanctioned for the Railway, including a European Inspector on Rs. 200 per mensem. In February, 1889, a committee assembled under the presidency of Colonel Sir Robert Sandeman, to consider the general question of the administration of the police and levies, and the outcome of its deliberations was the appointment of an Assistant Political Agent, who was to be District Superintendent of Police, the raising of the pay of the inspector to Rs. 250, and the provincialisation of the police and levy services. Lieut. W. M. Cubitt was now appointed Assistant Political Agent and District Superintendent of Police. In 1890, reductions were made both in the District and the railway police, the *batta* or allowance paid for dearness of provisions being abolished, the scale of pay revised, and the Political Agent made *ex officio* Deputy Inspector-General for Police. The European Inspector was given the honorary rank of Assistant District Superintendent of Police, and sanction was accorded to the amalgamation of the municipal or city police with the District police. In 1892 the native inspector's appointment was changed into that of an Assistant District Superintendent of Police. In 1895, reductions amounting to Rs. 588 per mensem were made in the force, and in April 1897, the Government of India sanctioned the appointment of a District Superintendent of Police on Rs. 600 for the Quetta-Pishín District and North-Western Railway Police within the limits of the Agency, a Police officer being deputed from the Punjab, who was to receive an allowance of Rs. 100 per mensem while employed in Baluchistán. Mr. S. Wallace joined in August 1897, and

POLICE.

in November 1897 was placed in charge of the Thal-Chotiáli District Police also. The powers conferred on Political officers in 1890 in regard to the police were now withdrawn. The arrangement whereby an officer was obtained from the Punjab was reconsidered in 1899, and a local appointment of a District Superintendent of Police on Rs. 400 per mensem, rising by annual increments of Rs. 40 to 600, was sanctioned. The appointment of Honorary Assistant District Superintendent of Police was at the same time abolished. The District Superintendent of Police is in charge of the District and railway police in the Quetta-Pishín, Sibi and Bolán Pass Districts, and the small force in the Chágai District is also included in the Quetta-Pishín force for purposes of pay and discipline. In April 1900, the Quetta cantonment police was amalgamated with the District police, for purposes of pay and discipline, but the Cantonment Magistrate is still the administrator of this section of the force.

From time to time it has been held that the proper agency for the detection of crime in the District was the local headmen and the levy, rather than the foreign policeman, and that the system of tribal responsibility should be more generally extended. In April 1902, an order was issued by the Agent to the Governor-General in which it was laid down that it was the duty of all *lambardárs* or headmen to keep a watch on their villages, and to report the misconduct of anyone or the advent of any suspicious person; it was also their duty to detect crime, and when cases were taken up by the Government, to help in their detection by giving direct information or furnishing clues. The headmen were also to be held responsible in case of the tracks of thieves not being traced beyond their villages. In 1903, the police force was again reconstituted, and it was decided that the investigation and detection of crime should in future be more largely entrusted to levies, and that except in the larger towns and bazars on the railway, the duties of the police would be more especially confined to guards and escort duty.

Total strength.

On the 31st of March, 1904, the police force of the District totalled 519, and included 1 District Superintendent of Police, 1 Assistant District Superintendent, 16 inspectors and deputy inspectors, 86 sergeants, 53 mounted men and 362 constables. They were distributed as under :—

Guards, escorts and miscellaneous duties, including reserve	240
Quetta city thána	88
Quetta sadar thána	15
Quetta cantonment	92
Thánas at New Chaman, Kila Abdulla and Pishín	30
At 15 railway stations	54

Twenty-nine men were also employed on temporary guard duty

provided for special purposes and paid for by the employers. Details of the distribution are given in table XXIII., Vol. B.

Municipal and cantonment police.

The cost of the whole force is charged against the Provincial revenues, to which the Quetta municipal fund contributes Rs. 1,276 and the Cantonment fund Rs. 1,103 per mensem. These contributions, however, vary according to the strength of the force maintained in each area. The numbers sanctioned at present (1905) are the following:—

	Inspectors.	Deputy Inspectors.	Sergeants.	Constables.	Total.
Quetta municipal police ...	1	1	8	77	87
Quetta cantonment police ...	1	1	14	68	84

Railway police.

The railway police are not a distinct body, but form part of the District police. An inspector holds charge, and the total number of men employed is 54. Of these, 25 men are employed in the Quetta railway thána, and the remainder are distributed at 14 stations. The Railway department employ their own *chaukídárs.*

Chaukídárs.

Twenty-two *chaukídárs* are employed by the Pishín sadar and District bazar fund for night watch at the Bostán, Pishín Gulistán, Kila Abdulla, Shélabágh and New Chaman bazars.

System of recruitment and training.

The police are enlisted chiefly from Punjábis and others, who come to Baluchistán from India in search of work. The percentage of the people of the country employed in the force is only 13. There seems no reason why local men of good character should not be obtained in time and with patience. A few men are sent to the Punjab Police Training School at Phillour every year and generally do well.

Attitude of the educated people towards police service.

Educated people readily take service in the Police, but in the majority of cases only as a temporary measure, until they can get better places elsewhere and improve their prospects. The number of educated men in the force is gradually increasing, especially in the higher grades. In 1903, all inspectors and deputy inspectors were educated, while among other officers the percentage of educated was 33, and among constables 16.

Measures taken to improve the status of the police, etc.

Measures have been taken from time to time to improve the pay of the various grades. The revision which was sanctioned in 1903 provided local allowances for certain posts of

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POLICE.

Deputy Inspectors and for all trackers; an increase from Rs. 17 to Rs. 18 in the pay of sergeants of the second-grade; and the reconstitution of the proportions of the various grades of sergeants and constables, so as to give a fairer scale and quicker rate of promotion. The rules regarding finger prints laid down in Punjab Government Resolution No. 1998, dated September 3, 1903, were adopted in 1905 for taking the finger impressions of prisoners, but systematic measures for the identification of criminals by finger prints have not yet been introduced.

Arms.

The Police have hitherto been armed with Snider rifles and side arms, but in August 1902 the Government of India sanctioned the substitution of Martini Henry rifles for Sniders for issue to guards, etc., and of bored-out Martini Henry rifles for the use of others. These orders are now being carried out. An excellent weapon in the shape of a short weighted hog-spear, with a crook let into the head, has been supplied to the municipal police in Quetta since 1904.

Cognizable crime.

Generally, the District may be said to be remarkably free from crime; indeed an average of about 5 cases of murder per annum may be regarded as very remarkable for a frontier District. The figures which will be found in table XXIV., Vol. B., really indicate the state of crime in the towns and bazars. Outside these places, crime is remarkable by its absence, the only forms of importance being cattle-lifting and occasional robbery. No criminal classes exist among the indigenous population, and, as will be presently shown, almost all offences are committed by bad characters from Kandahár and the North-West Frontier Province. So long as the leaders are watched and gambling and unnatural vice kept under control, serious crime will be kept at a minimum.

Character of crime in rural areas.

The principal cattle thieves are Ghaibézai Achakzais, who descend from across the border into the Pishín and Kila Abdulla plains and steal camels and other cattle while the attention of the herdsmen is diverted. The animals are generally concealed in the deep ravines (*chur*) by which the plains are intersected, until nightfall, when the opportunity is taken of driving them across the border. Horse stealing is occasionally committed by people from Márúf in Afghánistán, the animals being often taken across Toba, through the Kratu, Sábúra, and Toghi passes. Cases of rifle thefts are isolated, and are generally committed by relations and friends of tribesmen in the regiments stationed in Quetta, principally Khattaks, Afrídis and Wazírs. A few thefts of this kind are also committed by Achakzais. The arms stolen by the northern Afgháns usually find their way through Loralai to the North-West Frontier Province, while those stolen by the Achakzais are disposed of in the country round Kandahár.

POLICE.

The influx of Ghilzai labour, which takes place in October and November on its way to Upper Sind, accounts for some of the thefts, which are committed when they crowd into the bazars and small levy posts in order to get supplies. A form of theft common on the railway is the removal of steel keys, the perpetrators being generally Násir flock-owners and Ghilzais.

Crime in the towns.

The crime of the towns is committed by Kandahári Afgháns, Lángavs from Kalát, Punjábi sweepers, bad characters from the North-West Frontier Province, chiefly Wazírs, Khattaks and Yúsufzai Afgháns, and occasionally by domestic servants. The most notorious burglars are trans-frontier tribesmen, Sulaimán-Khéls and Bárakzais, the proficiency of the former in burglary being no doubt due to their constant employment as káréz-diggers.

Trackers and recovery of stolen goods by ransom.

Much use is made of trackers, one of whom is attached to nearly every large thana. Some of them are recruited from Déra Gházi Khán, but Achakzais are extremely expert in tracking across hilly and rough country. Cases have been known of the recovery of lost animals several months after their loss, by the trackers identifying their prints in areas far removed from where they were stolen. Property taken across the border is frequently recovered by ransom. It is usual for the man who wishes to recover stolen property and has discovered its whereabouts, to go to the encampment or village where the property is known to have been taken, accompanied by a man known as a *badraka*, who is responsible for his safety. The *badraka* acts as go-between for the recovery of the property, and settles the terms of its surrender. There is no officially-recognised system of extradition or reciprocity with Afghánistán.

Statistics of crime.

It will be observed from table XXIV., Vol. B., that there has been a general increase of cognizable cases, especially under the head "Offences not specified." Grave crime, however, exhibits little fluctuation. The general increase in crime is due to the better enforcement of the Police Act and of Special and Local laws. In the years previous to 1901, the District was visited by successive droughts, a fact which may account in part for the larger figures in some of the years during this period. Criminal statistics are, however, always largely affected by the personnel of the police establishment. In the years following 1901, there has been a decrease in serious crime. The few cases of murder which occur in the towns, are generally committed upon public women, the ultimate object being theft. Sometimes they are prompted by jealousy. In the district, disputes over women and about land and water are the most frequent causes of this form of crime. Many of these cases, however, are dealt with by *jirgas*.

Remarkable crimes.

Mention may be made of three cases of violent crime, which

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Faiz Muhammad.

caused considerable sensation at the time of their commission. A man named Faiz Muhammad, ex-levy sowar and *chaukidár*, who had been convicted of theft in 1893, was "wanted" in connection with another theft in 1894, and, on the police and levies going to Old Bazar in Pishín to investigate the case, on the 4th of September 1894, he shot two men and three horses dead, set fire to a mill and some stacks of grain, and absconded across the border to Márúf. From this place he made several further attacks during the six months following, and succeeded in carrying off two horses, killing seven men and wounding three others. Among the most daring of these outrages was that committed on the 20th of February 1895, when he murdered a cavalry *syce* and wounded a postal peon close to the Pishín fort, and again on the night of the 25th of April 1895, when he fell upon the Deputy Commissioner's camp followers, who were proceeding to Khushdil Khán Band, and killed three men and wounded one. The result was demoralisation in the entire district. The people were alarmed; servants were unwilling to travel; and night marching was unsafe. After the raid of the 25th of April 1895, Colonel Gaisford, then Political Agent, determined to follow up Faiz Muhammad, and, starting from Mandanna at 5 P.M. on the 29th April with a party of 32 men, before sunrise next day surrounded the *kizhdi* of Shéru, Gurjézai, where Faiz Muhammad was sleeping. On Faiz Muhammad firing on the party he was wounded and captured, but died on the way to Mandanna, where the captors arrived on the evening of the 30th of April after covering about 86 miles in 23 hours, out of which 19 hours had been spent in the saddle. Rewards were conferred on the principal men of the pursuit party, and the Tarín villages, including Haidarzai, through which Faiz Muhammad passed on his way to and from the Amir's territory while committing the outrages, were fined sums amounting to nearly Rs. 2,400.

Brewery outrage of 1899.

In August 1899, the Brewery at Kiráni was attacked by a gang of Bráhuis, under the leadership of one Kamál Khán. Kamál Khán was a Bráhui, who had left the Bolán a few months previously, and had taken up his abode on the Sarlat hills, near the border. On the day preceding the attack he crossed the Mashélakh hills, and using the path across the Chiltan range, he and his party of some twelve men lay up in a field of maize in front of the workmen's quarters at the brewery. About 9 o'clock, when some of the men were having their dinner and others had just gone to sleep, the party fired a few shots and then rushed in, sword in hand. The result was that eleven men were killed and nine wounded. One man was asleep on his *charpoy* when another man who was closely followed by a fanatic ran into his house and fell dead on the sleeper. The fanatic continued to cut the corpse,

which the man in the bed used as a shield, and, though he received a number of scratches, he was at work a few days afterwards. Kamál Khán with his party escaped across the Chiltan range, via Sinjadi, and got safely across the border by the next morning. He first went to Kandahár and was well received by the Amír's officials. He then made his way to Askábád, but subsequently surrendered to the Governor-General's Agent at Meshed. He afterwards absconded and died in the sanctuary there. Other members of the gang have since been convicted.

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Shér Ali.

In the early part of 1902, a notorious gang of professional thieves was run down jointly by the police and levies and nearly every member captured. The leader of the gang was Shér Ali, Bárakzai, a trans-frontier Afghán. This man had been implicated in several very serious offences, the most flagrant being the murder of constable Bahádur Khán of Quetta-Pishín force, whilst on beat duty on one of the roads in the civil lines. Shér Ali was sentenced to transportation for life, and the other members of the gang were severely dealt with. He is since reported to have made his escape from the Andamans.

Cattle pounds.

The District possesses nine cattle pounds, which are located at Quetta, Pishín, Bostán, Kila Abdulla, Khushdil Khán, Chaman, Mián Ghundi, Panjpái, and Kuram. The first six are managed by the Police and the remainder are under the Assistant Political Agent at Quetta. Previous to 1895, the receipts of all cattle pounds, except Quetta, were, after deducting the cost of establishment, etc., paid to the Pishín bazar fund, but all receipts are now (1905) credited to the Provincial revenues, from which the charges for maintenance are also met.

JAILS.

The Pishín subsidiary jail possesses accommodation for 35 male and 5 female prisoners. Convicts, whose term of imprisonment does not exceed one month are detained in this jail, and are generally employed in the public gardens. Up to 1886, when the new jail was built at a cost of Rs. 23,111, prisoners in Quetta were kept in the fort. The new jail has accommodation for 104 male and 5 female prisoners, and is intended not only for prisoners from the Quetta-Pishín District but also for non-indigenous prisoners from Chágai, whose sentence exceeds one month, and for not more than 12 indigenous prisoners of good conduct from Zhob, whose term does not exceed two years. With the exception of prisoners from Zhob, native convicts whose term exceeds six months are transferred to the Shikárpur jail; juvenile prisoners are sent to the reformatory at the same place, and European convicts to the jail at Karáchi. Civil prisoners, both European and native, are kept in Quetta.

The prisoners in the Quetta jail are employed in grinding

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corn for their own food, in making blankets for their bedding and clothing, and on work in the public gardens.

During 1902-03 the total daily average number of prisoners was 67·44: males 66·17, females 1·27; and the total expenditure on establishment and contingencies amounted to Rs. 8,253. The number of prisoners in the jails on March 31, 1903, was 64, all of whom were males.

There is no lunatic asylum at Quetta, and such lunatics as are required to be detained in an asylum are sent to Hyderábád in Sind, through the Deputy Commissioner of the Upper Sind Frontier at Jacobábád.

EDUCATION.

Early methods.

Before the British occupation, no system of public instruction existed. *Mullás* taught the Korán by rote to boys and a few girls, and such men as aspired to more extended knowledge of Muhammadan theology and law had to spend some years in Kandahár in prosecuting their studies. *Mullás* charged no tuition fees, but were maintained by the *zakát* subscribed by the villagers, generally one-tenth of the produce of the lands and one-fortieth of the flocks, which every Muhammadan is required to set apart for charity, and also by alms given on various occasions and by marriage fees. This system is still maintained in many places in the District, and a rough estimate shows that in 208 such institutions about 900 boys and 90 girls were under instruction in 1903. Should an extensive system of primary instruction ever be introduced, these *masjid* schools are likely to form a convenient basis on which a beginning may be made.

Growth of Schools.

The Sandeman High school, Quetta.

As the Quetta town grew and assumed an aspect of permanence, the want of an educational institution was much felt by the native Indian community, and a small building was erected from the town funds in 1881, in which an Anglo-vernacular middle school was opened in 1882, the cost of the establishment and other charges being also met from the town funds. In 1887, a Sindi department, both in English and vernacular, was opened for the Sindi boys. This was followed in 1890, by a grant of Rs. 200 per mensem from Provincial Revenues. As the number of pupils continued to increase, the existing building was soon found to be inadequate, and in 1891, the present school building, known as the Sandeman school, was erected at a cost of Rs. 15,500, a sum to which Provincial Revenues contributed Rs. 7,000. In 1892-93 Sheikh Fazal Iláhi, B.A., head master of the school, now an Extra Assistant Commissioner in the Punjab, opened a high school, for the additional cost of which private subscriptions were raised, and in 1893-94 sanction was accorded to the school being permanently raised to the status of a high school, the staff being at the same time increased and the pay revised. The post of head master was made pensionable, and the grant paid from the Provincial Revenues was enhanced. Between 1889 and 1902, 124 boys from this school

passed the middle school examination successfully, and 50 boys passed the University Entrance examination. Of the former number, 6 were local boys. Five boys have graduated in the Indian Universities and a Kandahári Hindu, Gavardhan Dáss, is now (1905) studying law in England. Several men now holding appointments under the Local Government have also been educated in the school. Boys have to go to one of the Punjab centres for the Entrance examination, but since 1902 Quetta has been made a centre for the middle school examination.

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In 1893-94 four rooms in the levy lines were allotted to boys coming from the villages to study in the Sandeman high school, and in 1896-97 a boarding-house capable of accommodating 15 boys was built at a cost of Rs. 3,684, the money being raised by private subscriptions. This accommodation has since been found to be inadequate, and the Government of India have recently (1904) sanctioned a grant of Rs. 10,000 from Imperial funds for a hostel for the sons of chiefs and headmen.

A branch of the school is the Gaisford memorial school, in which the three primary classes are located. It was built in 1901-02 from private subscriptions (Rs. 1,600) and municipal aid (Rs. 2,400). Two rooms were added in 1903-04 at a cost of Rs. 2,898 from the Provincial Revenues.

Private and aided institutions.

The Brahmo aided school.

In 1899, a primary school was established by the members of the Quetta Brahmo Samáj, which is maintained from fees, private subscriptions and a grant-in-aid of Rs. 30 per mensem from the municipal funds. The special feature of the school is the moral instruction imparted to boys, for which suitable books have been prepared and published The children are also required to attend the Sunday school. The school is located in the Samáj buildings.

The Pársi school.

A school for Pársi children of both sexes has recently (1904) been opened in the precincts of the Pársi Fire Temple. The building, which has cost about Rs. 5,000, has been presented by Khán Sáhib, Ardéshir Dossábhoy Márker, Honorary Magistrate and municipal commissioner. It contains accommodation for about 50 pupils.

Village schools.

In 1891, the Government of India sanctioned an annual grant of Rs. 1,200 from the Imperial Revenues to further the cause of primary education in Pishín, and since then annual grants have been made from Provincial Revenues. Primary schools exist at Kuchlák (established in 1893), Samungli (1894), and Nau Hisár (1902), in the Quetta tahsíl; at Pishín (1892), Khushdil Khán (1892), Gulistán (1904), in the Pishín tahsíl; and at Chaman (1894) in the Chaman Sub-division. The cost of the first two schools is met from the Provincial Revenues, while the rest are maintained from the Pishín sadar and District bazar fund, aided by grants from the Provincial Revenues,

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Boys who pass the upper primary examination and wish to continue their studies further, are sent to Quetta, where a certain number of stipends have been provided for them from the bazar fund.

Education of Europeans.

The Station school, which admits European children of both sexes, is under the management of the Chaplain of the Church of England at Quetta. It follows the Education Code for European schools in the Punjab, and teaches up to the middle standard. The school was established in 1888, and its present building was erected in 1894, at a cost of Rs. 6,454. The sources of income are fees, contributions paid by the Quetta municipality and the North-Western Railway, and the grant made annually, on the results of the examination, from the Provincial Revenues. The number of pupils in March 1904 was forty-four.

Female education.

In a District where the education of boys is still backward, much progress cannot be expected in female education, but it can at least be said that a beginning has been made. A Primary school for girls was established by subscription in 1889, and a building for it, costing about Rs. 5,000, was presented by Khán Bahádur Burjorjee Dorabji Patél, C.I.E., Honorary Magistrate and municipal commissioner. The school is named the Lady Sandeman girls' school, and, since April 1, 1890, has been maintained from the municipal funds. In 1902, a grant of Rs. 180 per annum was sanctioned from Provincial Revenues, partly to meet the pay of a teacher for the special Muhammadan or Korán class. The school is divided, according to the vernacular language which forms the medium of instruction, into Urdu, Hindi and Gurmukhi departments, each department having five classes. Since its establishment a number of girls have passed the upper primary examination successfully. In its early days, a special feature of the school was a class for married women, but this has since been abolished in the absence of interest and attendance. The number of pupils in March 1904, was 94, of whom 26 were Muhammadans and 68 Hindus.

Zanána Mission schools.

The Quetta branch of the Church of England Zanána Mission Society have under their management three primary schools: one for Christian girls, opened in 1897, the second for Hindu girls, opened in 1898, and the third for Muhammadan girls, opened in 1901. These schools had 78 pupils in March 1903. The two latter have since been amalgamated and a school has been opened for sweeper children. The Society has received a grant-in-aid of Rs. 270 per annum from the Quetta municipal fund since April 1903.

Education of Muhammadans.

Special efforts have been made from time to time to popularise education among the local Muhammadans, the more important measures adopted being the exemption of a certain

number of boys from tuition fees, and the imposition of a reduced rate for others in Quetta; the entire exemption of monthly tuition fees in all village schools; the reservation of a certain number of stipends in the Sandeman high school for local boys; the provision of a boarding house at Quetta; and the opening of special classes for Pathán boys in the Sandeman high school and for Muhammadan girls in the Lady Sandeman girls' school, in which the Korán is taught. Half-yearly returns of boys who are qualified for service are sent to the Political Agent, who endeavours to provide them with suitable appointments, as opportunity occurs. To further the cause of education, lads belonging to local influential families have been trained in Survey and Settlement work and appointed as náib tahsíldárs, while others have been given appointments in the police. EDUCATION.

Table XXV, Vol. B, contains statistics of the number and class of pupils, the sources of income and the cost of each school during 1903-04. In 1883, there was only one school with 43 boys, of whom 6 were local Patháns, while in March 1904 there were 12 schools containing 827 pupils, of whom 226 were local Patháns, Bráhuis and others. The total cost of education in 1903-04 was Rs. 23,516, of which Rs. 8,291 were paid by local funds, Rs. 7,085, by Provincial Revenues, and the balance met from fees and subscriptions.

Miscellaneous.

The public schools, i.e., the schools which are maintained from local funds or Provincial Revenues are under the control of the Assistant Political Agent, Quetta, who is assisted in the management of the Sandeman high school and the Lady Sandeman girls' school by a committee representing the various native communities and appointed annually by the Political Agent. The scheme of studies is the same as that in force in the Punjab, and a set of rules—The Quetta-Pishín Education Rules—was issued in 1895 as a guide for the administration of the schools. Tuition fees are levied in the Sandeman high school at rates which closely correspond with Punjab rates, and an admission fee of four annas is levied in the Lady Sandeman girls' school and in all the village schools, but no monthly fees are imposed. Except the Kuchlák and the Samungli schools, the entire cost of which is met from the Provincial Revenues, all other schools are maintained from local funds assisted by grants from the Provincial Revenues. Under arrangements made with the Punjab Government in 1892, the schools at Quetta were, as a temporary arrangement, visited periodically by an inspector of schools from the Punjab, the head master of the Sandeman high school being appointed *ex officio* district inspector of schools. Since 1903, an appointment of Inspector-General of Education has been sanctioned for the North-West Frontier Province and Baluchistán, and a

EDUCATION. personal assistant to the Inspector-General of Education has since been stationed at Quetta. The latter will be in charge of all the schools in the Agency. Attention is paid to the physical training of boys, and a whole-time drill instructor has been appointed in the Sandeman high school. Once a year, sports are held at Quetta, in which boys from all the village schools take part. On the whole, the efforts which have hitherto been made in the cause of education seem to have met with success, and the results may be regarded as encouraging.

Libraries. The Sandeman library at Quetta was established in 1886. It has three classes of members, the rates of monthly subscription varying from four annas to one rupee; and receives a monthly grant from municipal funds equal to the amount raised by subscriptions and up to a maximum of Rs. 30. The affairs of the library are managed by a committee consisting of a president, two vice-presidents, a treasurer, an auditor, a secretary, an assistant secretary, and 10 members selected annually from among the subscribers. It is open to the public for reading newspapers and periodicals, but the subscribers alone can take out books. In March 1903, the library had 184 members, 1,557 English and 245 vernacular books, and subscribed to 29 papers and periodicals. The Government of India has sanctioned a grant of Rs. 55,000 for a public library and museum, which is now (1904) in course of erection.

The Browne library at Chaman was established in 1894. It has four classes of members, the rates of subscription varying from four annas to R. 1-8 per mensem, and it receives a monthly grant of Rs. 7 from local funds. On the 31st of March 1903, the library had 27 members and possessed 211 English and 263 vernacular books; it subscribed to 10 papers.

Presses and Newspapers. The Indian Presses Act (XXV of 1867) has not been applied to Baluchistán, but the permission of the Local Government has to be obtained for opening a press, and the newspapers are governed by the provisions of Notification No. 2651-I, dated the 25th June 1891, by the Government of India in the Foreign Department, entitled: "An order respecting the publication of newspapers and other printed works in places administered by the Governor-General in Council but not forming part of British India." Quetta possesses three presses: The Victoria Press, opened in March, 1888; the Albert Press, opened in December, 1891; and the Curzon Press, established in September, 1902. The first two are owned by Pársis, and the last by a Punjábi Sikh.

The only newspaper in the Province is the *Baluchistán Gazette*, which is published weekly by the Victoria Press and has a circulation of about 300 copies. It came into existence as *The Monthly Baluchistán Advertiser*, on the 1st of November

1888; was changed into *The Border Weekly News* on the 23rd of August 1889, and christened *The Baluchistán Gazette* on the 1st of January 1890. The same press also publishes (1904) a *Daily Bulletin*. The Albert Press for some time published the *Baluchistán Herald* in English and the *Sarhadi Akhbár* in Urdu, but neither of them survived for long. The most popular papers with the Indian officials of Quetta are the *Tribune* and the *Observer* (in English); the *Paisa Akhbár* and *Akhbár-i-Am*, all published at Lahore, and the *Amrita Bazar Patrika* published in Calcutta. Officials from the Bombay Presidency prefer the *Rást Guftár*, the *Gujráti* and the *Times of India*, published in Bombay. EDUCATION.

MEDICAL. The District is well supplied with medical institutions, and possesses a civil hospital and zanána dispensary at Quetta; civil dispensaries at Chaman, Gulistán, and Pishín, and railway dispensaries at Shélabágh and Bostán. Separate statistics for each, covering the period between 1893 and 1903, will be found in table XXVI, Vol. B.

The Principal Medical Officer is the Agency Surgeon, who has also been the Administrative Medical Officer of the whole Province since 1887. He was in charge of the civil hospital at Quetta till 1891, when a Civil Surgeon was appointed. The Military Medical Officer at Chaman is also in civil medical charge of the station, and receives a monthly allowance of Rs. 25 per mensem from the Pishín sadar and District bazar fund. The hospital assistants at Chaman and Pishín each receive a monthly allowance of Rs. 5 for supervising the sanitary arrangements, and those in charge of the railway dispensaries at Shélabágh and Bostán receive Rs. 10 a month each for medical aid to the indigenous population.

The Quetta civil hospital. The civil Hospital at Quetta was established in 1877 and has since rapidly expanded, until it now affords (1904) ample work, not only for the Civil Surgeon but also for a staff of three hospital assistants, the services of one of whom are specially devoted to the railway employés. The hospital consists of two medical wards, a surgical ward, a jail ward, a female ward, and an observation ward, a ward for female patients built in 1888 by Khán Bahádur Burjorjee D. Patél, C.I.E.; an administrative block presented in 1889 by the merchants, *sardárs* and *maliks* of Quetta; a surgical and eye ward built from public subscriptions in memory of the late Mrs. Barnes in 1892; and a railway hospital. The latter consists of 6 wards, with a central recreation room, and was built by the North-Western Railway in 1888-89 at a cost of about Rs. 16,000. A feature of the hospital is the fine operating room fitted with the most modern surgical equipment, which was added in 1904, and is one of the best of the kind in India. The hospital was maintained wholly from Imperial Revenues

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up to 1887. In 1888 a monthly contribution of Rs. 150 was sanctioned from the Quetta municipal fund, and in 1892 it was decided that European patients of the Civil department should be admitted into the railway hospital, to which a European nurse on Rs. 80 per mensem was appointed, towards whose pay the municipal funds contributed Rs. 30 per mensem. From August 1, 1899, the hospital was formed into a municipal institution, Government paying the hospital assistants, and contributing Rs. 500 per mensem towards its maintenance, which sum was to include any contributions which might be made by the North-Western Railway. The municipality now (1905) pays an annual sum of Rs. 3,000 for ordinary charges, as well as Rs. 360 towards the pay of the European nurse, the balance of the expenditure being met by private subscriptions and an annual grant of Rs. 1,200 from the Pishín sadar and District bazar fund.

The hospital is used not only by the people of the Quetta town and District, but by many trans-border Afgháns, by whom it is greatly appreciated. Cases come to the hospital from so far afield as Ghazni, and the institution may be regarded, therefore, as exercising a very wide political influence. In 1903, the total number of in-patients treated was 1,357 and of out-patients 17,596, while 808 operations were performed.

The Lady Dufferin hospital, Quetta.

A branch of the Countess of Dufferin fund was formed in Quetta in 1889. Nurses only were employed at first, but, in 1891, a dispensary was erected in the centre of the town at a cost of Rs. 3,093, and was named the Lady Sandeman zanána dispensary, and placed under a native female hospital assistant. The municipality contributed Rs. 100 per mensem towards the cost of maintenance. This dispensary has since been placed in charge of a Lady Assistant Surgeon of the Calcutta Medical College, and possesses accommodation for 10 in-patients. It has proved a great boon to the native women and children and is much appreciated. The number of in-patients treated in 1903 was 131 and of out-patients 5,452.

Mission hospitals.

The Church Missionary Society maintains two hospitals at Quetta. That for males, in which two European medical practitioners are employed, was opened in April, 1889, and additions and alterations to the building were made in 1891. It can accommodate 40 in-patients, and is divided into four wards, besides which there are several family quarters. The number of in-patients treated in 1903, was 676 and of out-patients 18,755, while 693 operations were performed. Medical work among women and children was started by Miss Wheeler, M.D., and Miss White, a trained nurse, in 1895, and in the summer of 1898, the Good Shepherd's hospital was built on the Sandeman school road in the Bábu Mahalla. It is

built with due regard to privacy, round a large courtyard, and consists of one large ward and several small ones, and possesses accommodation for 30 in-patients. A special feature of the hospital is the existence of outside family wards, each of which has its own separate verandah, courtyard and entrance, in which a male relation can stay with a woman or child without interfering with the *pardah* character of the hospital. In 1903, the number of in-patients was 411 and of out-patients 17,609; 164 operations were performed.

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Other dispensaries.

The civil dispensaries at Gulistán and Khushdil Khán were established in April 1883; the railway dispensaries at Bostán and Shélabágh in 1887-88; and the civil dispensary at Chaman in 1889. The Khushdil Khán dispensary was moved to Pishín in July 1883. The Gulistán and Shélabágh dispensaries possess no accommodation for in-patients; the Pishín and Chaman dispensaries can each accommodate 6 such patients. The number of in-patients treated in these dispensaries in 1903 was 517 and of out-patients 38,257. They are not only used by the people of the localities in which they are situated, but by persons from distant parts of the District and from across the border.

Principal diseases and their causes.

The principal diseases are malarial fever, dysentery, scurvy, eye diseases and diseases of the skin, while in winter excessive cold causes attacks of pneumonia, catarrh, bronchitis and a few frost bites. Sand flies and mosquitoes, to which malaria may be attributed, are numerous everywhere in summer, and the latter breed in great numbers in the gardens in Pishín, which are constantly irrigated. A heavy winter rainfall always means a great increase of malaria. Scurvy is due to the difficulty the poor have in getting fresh fruit and vegetables; in most of the villages distant from Quetta the use of vegetables is still unknown. Dysentery may be accounted for by the great variations in temperature, the bad water and the prevalence of scurvy. The dust storms which prevail in summer, more specially in Pishín and Chaman, added to the dirty habits of the people, produce eye and skin diseases.

Epidemics.

The usual epidemic diseases are small-pox (*kawai*) and cholera (*waba*). Measles (*sharrae*) are fairly frequent, and an epidemic in 1899 was attended with considerable mortality. The Achakzais consider it to be generally followed by dysentery and cough, doubtless owing to the absence of precautions during convalescence. Typhus appears to be not uncommon.

Small-pox.

Small-pox appeared in an epidemic form among the Achakzais of Chaman in 1856, when about 800 persons of all ages were attacked, the death rate being about 75 per cent.; this year, owing to the fearful mortality, is still remembered as *da rag kál*, the small-pox year. Both the frequency and severity

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of the epidemics have been lessened by the introduction of vaccination, but small pox is still held in much dread. In the language of the countryside the small-pox goddess says to her victim: "I will either put you in your grave or blacken your face."

Cholera.

Cholera appeared in Quetta in 1885, and again in 1903; in the latter year there were 967 cases and 726 deaths in the whole District. In Pishín, a few cases of cholera, believed to have been imported from Kandahár, were reported in the autumn of 1887, chiefly among the coolies employed on the Khusbdil Khán Reservoir, and later on the disease spread to parts of Sibi and Kachhi. The published reports state that 36 cases and 22 deaths occurred, but these figures are probably below the mark, as no systematic method of registration was in force at that time. Cholera is also said to have appeared in Chaman about 1873, when there were some 200 attacks. The Achakzais have a belief that cholera has never appeared in Toba since Mián Abdul Hakím, commonly known as the Nána Sáhib, whose shrine is situated at Chotiáli, in the Duki tahsíl of the Loralai District, passed through Toba on his way from Kandahár to Chotiáli.

Influenza in an epidemic form, appeared in Quetta in March and April 1890, and spread to Kalát, Loralai and Zhob in succession. The attacks were both numerous and severe, and the constitutional disturbance considerable, but the mortality was small. The number of cases attending the Quetta hospital from this complaint alone was 936. A slight return of the disease in a mild form occurred in September and October.

Typhus.

Typhus fever broke out in the early part of May 1903 in the town of Quetta and in the District. In Quetta alone there were 113 cases up to the 17th of July, of which 30 were fatal. With the advent of summer it gradually disappeared.

Vaccination and inoculation.

Vaccination is compulsory in the town and cantonment of Quetta. Its advantages are also beginning to be appreciated by the indigenous population of the Quetta and Pishín tahsíls, but in the Chaman Sub-division the people still cling to inoculation. Between 1895 and 1902, 31,622 successful operations were performed by Government vaccinators.

Inoculation, which is locally called *rag*, is practised by *mullás*, Saiads and other persons of religious sanctity, whose services are requisitioned when an outbreak of small-pox occurs, and who are paid a small fee as an offering, in cash or kind. Certain persons are generally considered specialists in the art, and the operation is either performed by them personally or by their deputy (*khalífa*). The method usually adopted is for a small incision to be made with a razor on the wrist of the right hand, in which powdered small-pox

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pustules, mixed with cloves *(laung)* or some other aromatic substance, and a grain of wheat are placed. A cloth bandage is then tied over the wound, and in Chaman it is warmed over the steam of a kettle, in which meat is being boiled, to accelerate the appearance of the eruption. The patient is then placed in a *kizhdi,* and is only visited by persons who have themselves had small-pox. An eruption and fever generally occur within three days of the operation, and at this time the patient is fed in Chaman on dry bread baked on the embers of *Artemisia vulgaris* (*tirkha*), or on leavened bread baked on a stone griddle (*tabi*); he may not be given bread baked on an iron griddle nor any other kind of food. In Quetta, however, wheaten bread, molasses, pastry and sheep's milk, and in Pishín *chikor* soup are given during the fever. If no eruption or fever occurs within three days, the operation is repeated a second and sometimes a third or fourth time until it proves successful. When suffering from the eruption a patient may not be visited by women or other persons who for any reason may be considered 'unclean,' according to the custom of the country. The indigenous Hindus of Quetta, like other Hindus of India, consider small-pox the visitation of a goddess, and treat it as described above.

Indigenous remedies.

While the people who live near the places where there are dispensaries, have begun to appreciate the advantages afforded by British medical institutions and freely visit them, those living in the remote parts still resort to their own simple remedies, of which some notice may be given here. In cases of cholera the first remedy is to wrap the patient in the skin of a she-goat, which is killed for the purpose, onion juice being given to allay thirst. A draught is given made from about four chittacks of crushed pepper, steeped in two seers of water and kept over night. The green leaves of the willow tree are pounded and applied to the abdomen. The patient is segregated, and the household and even the village in which the disease appears, is avoided.

Next to cholera, the remittent fever, known to the Afgháns as *khwa chapi* or *loe taba* and to the Bráhuis as *bhalla hilt* (possibly typhus), is the most dreaded disease. It is considered infectious, and the patient is segregated in a *kizhdi* or hut, at least 100 paces away from other habitations. The same precautions are taken as in cases of cholera. In Pishín, bleeding is resorted to as the first remedy, the vein known as *chár andám* being opened, and elsewhere decoctions of local plants are administered as a diaphoretic. Among the Achakzais of Toba, a line is drawn with an iron rod, knife or sickle round the *kizhdi* in which a patient is segregated, by a man from one of the sacred sections known as the Pánézai, Isháqzai and Rodi Alizai, who at the same time mutters spells, and presents the family with salt enchanted to keep off infection. The patient is also only allowed

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to drink water in which the ashes of a dog's *excreta* have been mixed.

Catarrh (*ghára*) is regarded by Patháns as "the source of seven diseases," as, if neglected, it brings on other ailments such as fever, cough and pneumonia. Various remedies such as opium, eggs boiled with pepper, and chicken soup are given. In cases of dysentery, fresh pomegranates, or pomegranate skins mixed with curds are used; while for diarrhœa (*ishál*) myrobalan fruit (*tor uskai*) is administered. Eye diseases are treated with fresh cow dung or the boiled yolk of an egg, among many remedies. For malarial fever (*zharai taba*) the most common remedy is to wrap the patient in the skin of a sheep or goat, killed fresh for the purpose. The sheep skin is used generally in winter and the goat skin in summer. An infusion of the leaves of *tirkha* (*Artemisia vulgaris*) is also given internally in Chaman.

Working of the pice-packet system of sale of quinine.

The pice-packet system of selling quinine, through the agency of the post office, was introduced in 1895. During the first year, i.e., 1895-96, 1,203 packets were sold, the largest sale being in the Bostán post office (351 packets); in 1903-04 the sales had risen to 2,632, of which 1,224 were sold in Pishín.

Village sanitation and water supply.

Apart from the bazars at Chaman, Shélabágh, Gulistán, Kila Abdulla and Bostán, where fees are levied and sweepers are employed and paid from local funds, no arrangements, official or private, exist for the sanitation of villages. The litter and filth are allowed to remain in the houses and streets until they are removed for manuring the fields. A few well-to-do persons in the neighbourhood of Quetta have begun to recognise the advantages of cleanliness, and employ sweepers in their houses. The migratory habits of the people, especially of the Achakzais of Toba, also assist in sanitation to a certain extent, and after a certain lapse of time most village sites are abandoned, owing to the multiplication of insects in them. The mud huts composing them are thereupon re-erected a short distance away.

The supply of drinking water is drawn from springs, streams, or *kárézes* and in parts of Shorarúd from wells; occasionally also it is obtained from pools in which rain water has collected. The *kárézes* offer a fairly protected source of supply; in other cases no precautions are taken to keep the supply pure, and cattle and human beings drink and clothes are washed at the same place.

Improvement in public health.

Owing to the supply of piped water in Quetta and Chaman, the improvement of the drainage system, and other sanitary measures, an improvement appears to be taking place in the public health of the towns and bazars, but in the villages no appreciable alteration has yet taken place.

SURVEYS.

The Survey department of the Government of India has

prepared and published maps of the whole District on the quarter-inch and half-inch scales, and a map of the Quetta cantonment has been made on the scale of 16 inches to the mile. A similar survey of the civil station of Quetta was undertaken in 1888, and a revised edition of the map then published was issued in January 1893. The Survey department has also prepared a map of the Sor Range on the scale of 6 inches to the mile. SURVEYS.

In connection with the Settlement operations, a cadastral survey, based on traverses obtained from the Survey department, was undertaken of all irrigated villages in the Quetta tahsíl, during 1892-96, on the scale of 16 inches to the mile. It merely showed the boundaries of estates (*maháls*), and was not field-to-field. In Pishín a *thákbast* survey showing the boundaries of villages and *mah√°ls* and of different classes of land was made for the whole tahsíl, but field-to-field survey was only carried out in places where it was impossible to settle and distribute the assessment equitably without it. The land was classed under the heads of irrigable, garden, culturable and unculturable. The agency employed for the village cadastral survey was almost entirely non-indigenous and was recruited principally from the Punjab; a few local Afgháns have been trained in survey and settlement work, and are employed in the subordinate revenue staff in the tahsíls.

CHAPTER IV.

MINIATURE GAZETTEER.

General description.

Chaman Sub-division.—The Chaman or Khojak Subdivision of Quetta-Pishín lies between 30° 28′ and 31° 18′ N., 66° 16′ and 67° 19′ E.; it is bounded on the north and west by Afghán territory; on the east by the Toba Kákari circle of the Pishín tahsíl; on the south-west by the lower slopes of the Khwája Amrán; and on the south-east by the main ridge of the Toba hills, by which it is separated from the Pishín tahsíl. Its length from east to west is about 65 miles, and its breadth about 30 miles, its total area being about 1,236 square miles. The whole of the country is hilly and cut up with numerous hill torrents and ravines.

It is divided into two main parts: the Toba plateau proper lying between the Khwája Amrán on the west and Sábúra on the east; and the western slopes of the Khwája Amrán, commonly known as Sahará. The Toba plateau is divided in its turn into four portions, three of which lie on the north-west and one on the south-east of the Sirki Band hills. Those on the north-west are known as Hamídzai Toba or Garmsél to the north, and Halkai Toba and Tabína to the south; while that on the south-east is called Loé or great Toba.

Hamídzai Toba comprises the valleys and ravines of Aghbarg, Khadar, Hésanna, Táshrobát, Kuchnai Dobandi and Loé Dobandi, Kadanai, Lakarai, Zémal, Manra, Aghbargai, Shahídán, Shashkáh, Hisárgi, and Sálún. Halkai or little Toba comprises Aghbarg, Chinár, Gwál, and Baiyan. Further west is the Tabína plateau, which possesses excellent soil for rain crops. Loé Toba consists of the valley of the Mandanna river, and is a fine plain containing the tracts known as Mandanna, Kandíl, Farákhi, Tirwa, Obushtgi, Shása, Spítoghi Girdi Murgha, and Wulgai.

The Sahará extends from the Boghra to the Ghwazha pass and is about 45 miles long and varies in breadth from 1 to 12 miles. New Chaman is situated in its north-western corner.

Hills.

The hills, comprising the sub-division, are known as the Toba hills and form part of the Toba-Kákar Range. They send out the Khwája Amrán offshoot to the south-west, and have a mean elevation of about 8,000 feet. In parts there is a good deal of pistachio (*khanjak*).

Rivers.

There are no streams of importance in the Sahará. The plateau is drained by confluents of the Kadanai which runs along the northern border, the principal ones from east to west

being the Mandanna, the Gwál and Hésanna, which combine as the Táshrobát. The Táshrobát possesses a perennial supply of water in the lower part of its course.

Forests.

There are no reserved forests in the sub-division, but in the Khwája Amrán range some areas bearing pistachio exist, which are worth supervision, and one tract, Zérga Shéla, about one square mile, is under strict protection and closed to grazing, as a test of the natural regeneration of pistachio in that locality.

Fauna.

There are no wild beasts peculiar to the sub-division; wolves, hyenas, foxes, jackals and mountain sheep are met with in the hills; hares are plentiful in the ravines and in Tabína; there are fish in the Táshrobát and in pools in the Kadanai where wild ducks are also occasionally met with; chikor and sisi are plentiful everywhere.

Climate, temperature and rainfall.

The climate of the plateau is the coldest in the District. The cold is excessive from about October to the end of March, during which time a good deal of snow is received, but the conditions are cool and temperate during the rest of the year. The water of the Gárgai spring, about a quarter of a mile from Burj-i-Ashaq, has so great a reputation that Ahmad Sháh, Durráni, spent three months here in 1773. He was on his way back to Kandahár when he died in Kadanai.

In the Sahará the mean temperature in January is about 43° and in July 88°. The most unpleasant feature of the climate in this part is the frequency of the dust storm from the Régistán. The average rainfall in nine years ending with 1902 was 7·17 inches, of which 6·47 was received between October and March.

History.

Local tradition asserts, that the Táshrobát valley was once in the hands of the Targhara Kákars, who were practically annihilated by the Marris, the site being still marked by a graveyard at a place known as Shahídán. Ahmad Sháh, Durráni, afterwards gave the country to the Alakozais, from whom the Manzakai or Dobandi lands were purchased for 5,000 Kandahári rupees by the present occupants, the Mahakzai Hamídzais. Alakozais still occupy Kuchnai or little Dobandi though, for all practical purposes, they have been absorbed among the Mahakzais.

Population.

In 1901, there were one town, namely CHAMAN, four villages and 3,159 occupied houses. The paucity of villages is accounted for by the nomadic habits of the people, who live in blanket tents. The population amounted to 16,437 or 13 persons per square mile, of whom 9,915 were males, and 6,522 females. Details are shown in the marginal table. An account

Hindus	1,260
Christians	32
Musalmans consisting of—	
1. Achakzais ...	13,039
2. Núrzais	386
3. Tor Taríns ...	111
4. Alien population, chiefly Indian ...	1,556

MINIATURE GAZETTEERS.

of the Achakzais, the strongest tribe, has been given elsewhere. The Achakzais are engaged in agriculture and flockowning, a few of the Hamídzais and of the Alízai section of the Nasratzais trade with Afghánistán.

Agriculture.

About three-fourths of the cultivated area depends upon rain and one-fourth on permanent sources of irrigation, which consist of springs and streams in Toba and *kárézes* in the Sahará. The soil of Farákhi, Tabína and Sahará is good, in other parts it is mixed with sand and gravel. The principal crops are wheat, and maize, the latter being sown in irrigated lands only. The agricultural stock is roughly estimated at 1,040 camels, 1,500 cattle, and 20,500 sheep and goats. A few ponies are also kept.

Communications.

The railway and a military road run from Shélabágh to Chaman by the Khojak pass, and a path connects Ghwazha with Boghra, called the Sénr *Liár*. Chaman is connected with Bahlolawarr, the principal levy post on the border, by a road as far as Boghra Sar and thence by a track through Dobandi or Loé Dobandi. This track continues southward and then eastward via Hésanna, Khadar and Súd Kárez to Sábúra. Chinár can be reached from Kila Abdulla through Arambi, Tabína from Kila Abdulla by the Psha pass; and Farákhi from Alízai in Pishín through the Kratu, Sanzal and Toghi passes. The principal passes, affording access to Kadanai and Arghasán in Afghánistán, are the Shashkáh, Shahídán and Wulla or Dad. Many other tracks lie across the plateau which are, on the whole, easily traversable.

Administration and staff.

A Native Assistant is in charge of the sub-division, with his headquarters at Chaman, which is a military station. The levies are worked through K. B. Ghulám Haidar Khán, Jalézai Hamídzai Achakzai, who has been invested with the powers of a Magistrate of the third class. The latter's headquarters are at Dobandi but he spends most of the winter at Chaman. The total strength of levies, the details of which are given in table XXII Vol. B, is 161, comprising 21 headmen, 25 sowars, 111 footmen and 4 clerks and menials distributed in 11 posts. Small detachments of troops are stationed at both ends of the Khojak tunnel, i.e. at Shélabágh and Spínawana.

Land Revenue.

The Achakzais pay land revenue, which includes cattle tax, in the shape of an annual lump assessment of Rs. 8,000, sanctioned for ten years from April, 1896. It is distributed over various sections in accordance with the number of *naukars* or men-at-arms which they had to furnish to the Afghán authorities in pre-British days. The Government lands irrigated by the Sirki Tilérai Kárez near Chaman, are let to tenants on produce rent, one-third of the gross produce. The total amount of land revenue realised in 1903-04 was Rs. 7,497.

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Miscellaneous including special products.

Rhubarb, known as *pushai* (*Rheum emodi*), grows in some quantities in the Khwája Amrán range and at Zémal, and is sold in the Chaman bazar and also exported to Quetta. The fruit of the pistachio forms an important item in the diet of the Achakzais, especially in winter. Hyssop (*zúfa*) is also found.

Chaman Town.—The head-quarter station of the Chaman Sub-division, and frontier terminus of the North Western Railway, 89 miles by rail and 78 miles by cart road from Quetta. It lies in 30° 56′ N. and 66° 26′ E., at an elevation of 4,311 feet above the sea, at the foot of the KHOJAK PASS and is about 2 miles from the Afghán boundary. The nearest Afghán post is the Boldak fort, also called Kila-i-Jadíd, about 6 miles to the north. Kandahár is about 65 miles distant and can be reached by four easy marches, the stages being Dabarai, Mél and Takhtapul. The name, Chaman, signifies a grassy flat or strath.

New Chaman, as it is called to distinguish it from Old Chaman, which lies higher up the slopes of the Khwája Amrán, three miles from Sanzal station, was occupied in 1889, when 5,303 acres and 15 poles of land were purchased for Rs. 5,000 from the Núrzais and Ashézai Achakzais. Of this about 424 acres were allotted to the Railway department, 227 acres to the Military and 4,651 acres to the Civil authorities. Building sites from the Civil land were given to shop keepers and others, on annual rent, which was fixed in the majority of cases by auction, the sites thus given measuring about 16 acres. The military land not occupied by the local troops is devoted to mobilisation grounds. The population in 1901, numbered 2,253: males, 1,867; females, 366, and consisted chiefly of Government servants in the Civil and Military departments, and traders.

The station is occupied by troops, the ordinary strength being one regiment of native infantry and a detachment of native cavalry. The infantry occupy the old fort near the railway station and the cavalry the new fort nearer the border. There is a police post consisting of one deputy inspector and 9 constables and also a levy post comprising one risáldár, 2 jemadárs, 2 daffadárs, 3 havildárs, 14 sowars, 1 farrier and 28 foot men. For night watch in the bazar 14 *chaukídárs* are employed who are paid from the Pishín sadar and District bazar fund.

There are 119 shops in the bazar of which 22 deal in piece goods, 6 in boots and shoes and three in fruit. Three of the shop keepers are goldsmiths and two are *saráfs* who carry on an exchange business of British and Afghán coins. In spite of the Amír's orders strictly prohibiting Afghán traders from using the Chaman station except for fresh fruit, a good deal of merchandise is smuggled into the place. During 1903, the principal articles received by rail were 3,920 maunds of European piece goods, 1,764 maunds of Indian piece goods, 1,26,560

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maunds of wheat, rice, food grains and flour, 4,200 maunds of sugar, 1,540 maunds of molasses and 168 maunds of tea. Goods despatched by rail included 1,596 maunds of fresh fruit, 12,264 maunds of dry fruit, 2,016 maunds of tobacco and 10,416 maunds of wool. The civil station possesses a combined telegraph and post office, a dispensary, a primary school, and a library opened in 1893 and called the Browne library after the late Sir James Browne; a caravan serai, a mosque, a Hindu *dharmsála* and three other places of worship. Besides the military buildings, the principal Government buildings are the Political rest house, levy lines, police post, the Native Assistant's court and office, and a dâk bungalow. At the railway station are extensive mobilisation sidings.

Octroi which is collected by departmental agency has been levied since 1892 and small conservancy fees are also levied. The proceeds are credited to the Pishín sadar and District bazar fund and a staff of sweepers is employed for the sanitation of the town. The bazar is administered by the local civil officers the senior of whom is the Native Assistant for the Chaman Sub-division, but the Officer Commanding has power, in consultation with the Political Agent, to allow shops, limited to the number actually required, in the fort or military lines and subject to all the ordinary taxes levied in the bazar.

The water supply of Chaman is drawn from two sources, the Khojak tunnel and the Boghra spring. The latter was piped from the mouth of the Boghra valley, a distance of about 6 miles in 1903 at a cost of Rs. 2,29,763, of which Rs. 46,734 were paid from Provincial Revenues and Rs. 23,266 from the Pishín bazar fund, the balance being charged to the Military department. The supply is 450,000 gallons a day, the civil share being half, and the sum contributed by the Civil department covers the commutation of the share of the charges for maintenance. In time of peace, the military demand is 60,000 gallons a day and, after allowing half a lakh of gallons for roadside trees and gardens, the surplus is available for irrigation under the control of the Civil authorities. In the event of military necessity, the whole of the water, except the amount actually required for the Civil population, may be appropriated by the Military authorities without the payment of compensation to the Civil department.

The share of the Khojak tunnel water owned by the Military Works department and the Provincial Civil department was sold to the North Western Railway in July 1901, for Rs. 35,000, of which Rs. 29,167 were paid to the Military and Rs. 5,833 to the Civil department, two-thirds of the latter amount being credited to the Provincial Revenues and one-third to the Pishín bazar fund. The conditions attached to this transfer were that in the event of the Khojak tunnel

supply falling short of 1,20,000 gallons daily, the Railway would be entitled to receive from the Boghra (military) system a supply to replace the deficiency and that, of the water thus given, 60,000 gallons daily would be delivered free, any quantity in excess of this amount being charged for at the rate of two annas per 1,000 gallons, and the amount credited to the Military department.

Old Chaman.—Seven miles to the south of New Chaman lies the Old Chaman post on the road leading over the Khojak pass. Previous to the British occupation of the country a small post was located at the place to collect transit dues from caravans. Its importance was recognised in the campaign of 1878-79, when a redoubt was built, and it was occupied by regular troops. Since the opening of the railway it has lost its importance. It has a fine supply of water from springs some of which is used to grow vegetables, maize and tobacco. The post is now held by 24* levies, Bádínzai and Ashézai Hamídzai and Alízai Achakzais. It is much used as a halting place by Afghán caravans proceeding over the Khojak pass to Kila Abdulla.

Dobandi.—(*Loé Dobandi* or *Manzakai*)—A hamlet and levy post in the part of Achakzai Toba locally known as Garmsél, at the junction of the Wuch, or dry, Kadanai and the Táshrobát streams. It is about 49 miles from Chaman via the Boghra pass and 45 miles from Kila Abdulla via Spéshlún and Tabína. The land where the hamlet and the post lie are stated to have belonged to the Achakzais from whom they were purchased by Mahak, the progenitor of the Mahakzai sub-section of the Hamídzai Achakzais in the time of Ahmad Sháh. The site for the levy post was purchased by Government in 1892 for Rs. 300 from the Mahakzais. The post is at the foot of the Manzakai hill, and its ordinary strength is one havildár, one *munshi* and 18 footmen. Besides quarters for the men, the post contains a rest house of two rooms with a verandah, a lock-up, and stabling for 12 horses. The water in the Kadanai is brackish. In winter, a well about 6 feet deep is used, while in summer a supply is obtained from Táshrobát stream, which is brought by villagers for irrigation purposes.

The population of the hamlet consists of about thirty families of Bráhímzai, Mahakzai, and Hamídzai Achakzais numbering in all about 100 souls. Their headman, Guj, is paid a monthly allowance of Rs. 15 from the levy service. The lands irrigated from the Táshrobát water are under assessment. They produce wheat and maize, and contain a few apricot and apple trees. In the surrounding hills and ravines there is plenty of chikor shooting and hares are plentiful. Fish are found in

* The sanctioned strength is 24 men, but 6 men are actually stationed in the fort, the rest have been moved to New Chaman and Toba.

MINIATURE GAZETTEERS.

the pools in the Kadanai river but the people do not eat them.

The post owes its importance to its proximity to the Afghán border and its command of four tracks leading to Afghánistán. Reference to these tracks will be found in the B. Volume under the Quetta-Toba-Chaman route. Almonds, wool and cumin seed and small quantities of piece goods, sugar and tea are smuggled across the frontier by these routes, generally by arrangement with the Afghán Khásadárs who are posted in the vicinity at Wullèwar, Manawar, Wulgai, Jilga and Tor Kach.

Opposite the post and on the northern bank of the Kadanai, is the Shahídán graveyard, which gives its name to the stream and the pass above it, and which is alleged by local tradition to have been the scene of a massacre of Kákars by Marri marauders in days gone by.

Khojak.—(*Kozhak*)—An historic pass in the Khwája Amrán offshoot of the Toba-Kákar hills. It is sixty miles from Quetta by rail and lies in 30° 51′ N. and 66° 34′ E. From Kila Abdulla on the south, the Quetta-Chaman cart-road rises by a gradual ascent through the Khojak or Madrakka hill torrent to Shélabágh, whence the summit (7.457 feet) is reached in 3¾ miles. Kila Abdulla is 20 miles from Old Chaman and 27 miles from New Chaman. Four miles above Kila Abdulla is the Zharraband levy post (55½ miles from Quetta) whence a road branches off to the Psha pass connecting with a track to Tabína and Jilga in Toba. A mule track connects the summit of the Khojak with the Spínatízha levy post, 39 miles to the south-south-west. The country on both sides of the pass is owned by the Ashézai section of Achakzais. It was full of pistachio (*khanjak*) up to 1888 but, during the construction of the tunnel and railway line, many of these valuable trees were cut down.

At Shélabágh the railway line runs through the Khojak tunnel (6,398 feet above sea level). The tunnel is the largest in India and is 12,870 feet long or 330 feet less than 2½ miles and cost Rs. 68,24,164 or Rs. 530 per linear foot. The work was begun in April 1888, and the tunnel was passed for traffic in September 1891. Besides the horizontal headings, work was carried on by two shafts 318 and 281 feet deep respectively, and 6,506 feet apart. The highest point is reached in the centre of the tunnel and is indicated by the striking of a bell attached to the rails. Both ends of the tunnel are guarded by troops, the main detachment being stationed at Shélabágh where there are also a post and telegraph office, a levy post, and two rest houses. The northern end is called Spínawana.

Lying on the route from Kandahár to India, the Khojak has been crossed and re-crossed for centuries by conqueror, soldier and merchant, and its passage has twice been effected

by the British arms in 1839 and 1879. On the former occasion, besides the actual physical difficulty, much trouble was experienced from Achakzai robbers. It took the troops five days of indefatigable exertion to get the whole park of artillery and team of waggons over the pass, and there was great loss in public cattle, ammunition and stores. Twenty-five thousand rounds of ball cartridge are said to have fallen into the hands of the Achakzais in consequence of the camels, on which they were loaded, having died on the road. During the second Afghán war, the Achakzais again gave trouble, and in August 1880, Sir Robert Sandeman had to force his way through with a small escort of cavalry.

From the summit of the pass on a clear morning are to be seen Chaman in the Sahará, with the Rég and the Lashkar Dhand. Mián Boldak, Tor Boldak, Kunchai and Bambol hills beyond. Behind the latter lies Kandahár, but it is not visible from this point of the Khwája Amrán. Sir Richard Temple, who visited the pass in October 1879 in company with Sir Robert Sandeman, has left the following interesting account of his experiences. 'The next morning Sandeman conducted us to the summit of the Khwája Amrán range, by the Khojak road, the historic pass by which invaders, commanders and soldiers have crossed and recrossed for many centuries. There he drew my attention to the roughly engineered road, by which the year previously the British guns had been drawn on the march towards Kandahár, terminating in the little green sward of Chaman, a miniature oasis in a wilderness. Then we gazed together over the low undulating tracts, at the end of which with our glasses we could descry the series of castellated hills behind Kandahár and even the ranges of northern Afghánistán in the dim distance. On our left front we soon perceived mighty clouds of dust rising up from the desert which flanks Kandahár on the south-west. With amazing velocity the wind was wafting it towards us. Seeing its rapid advance, Sandeman and I tethered our horses under shelter of the rocks, and ourselves stood on the summit to watch the phenomenon, though we could scarcely stand upright facing the storm, as the pall of dust enveloped us in passing darkness, and then driven onwards lifted the veil and restored the great landscape to our view. We together lingered in imagination over the conquerors, the kings, the heroes of the ancient and middle ages who must have looked with diverse feelings on this very scene. Before turning away we thought of the statesmen and soldiers of our own nation, who from this spot had taken the first and then last look towards Kandahár.'

General description.

Pishin Sub-division.—The Pishín Sub-division and tahsíl lies between 30° 31′ and 31° 12′ N. and 66° 21′ and 67° 46′ E., and is bounded on the north by the Toba hills and

the Khwája Amrán, the latter also forming its western limit; on the east by the Hindubágh tahsíl of the Zhob District; on the south-east by the Sháhrig tahsíl of the Sibi District; and on the south by the Quetta tahsíl including the Shorarúd valley. Its length from east to west is about 100 miles, and its breadth about 40 miles. It is the largest tahsíl in the District, its total area being about 2,717 square miles.

The best cultivated part of the tahsíl is situated in its centre and consists of a plain of fairly uniform level, about 50 miles long by 20 broad, lying in the basin of the Pishín Lora, at an altitude of about 5,000 feet, and with a gentle slope from north-east to south-west. The tracts lying along the surrounding hills are stony and much broken by ravines and flood courses; features of the valley are the numerous and deep cuts (*chur*) into which the soft soil has been cut.

On the north, the boundary extends to the neighbourhood of the watershed of the Toba hills and includes some fine glens such as Arambi. The Barshor and Toba Kákari circles occupy a mountainous tract at the north-eastern end of the Pishín valley, with an average altitude about 2,000 feet higher than that of the valley itself. The south-east is occupied by the Kárézát-i-Kákari and Lora Kákari circles, which consist of tracts confined by hills and lying along the valleys of the Surkháb and Gwál streams.

Hills.

The hills include part of the plateau and all the southern slopes of the Toba hills as well as the skirt of the Khwája Amrán; and also several spurs of the Kand mountain on the east, including Súrghund (10,589), Súrghar (8,146) and Shérghundi (7,768). Further south lies part of Takatu (11,375), and the northern point of the Mashélakh range, known as Ajram.

Rivers.

The principal stream is the Pishín Lora, rising on the north-east as the Barshor, which enters the Shorarúd valley near Burj Azíz Khán. Its principal affluents in Pishín are the Máchka from the north-west, and the Surkháb and Kákar Lora.

Forests.

The reserved forests in the tahsíl are the Súrghund juniper forest, 8,500 acres; Gwál pistachio forest, $4\frac{1}{2}$ square miles; and the Popalzai tamarisk forest, about $2\frac{3}{8}$ square miles. The tamarisk in the Surkháb valley is protected from camel grazing.

Fauna.

The wild animals are for the most part the same as those found in other parts of the District and consist of the wolf, fox, jackal, and hyena. A few ravine deer and hares are to be seen. Mountain sheep are fairly common on the northern hills. The common game birds include the chikor, sisi, sandgrouse (on migration), bustard, and pigeon; ducks are plentiful in the irrigation tanks. Some of the natives have a superstition against pigeon shooting, believing that any one who does so will become blind.

The climate of the tahsíl is somewhat warmer than that of Quetta. The mean temperature in Pishín from April to September is about 89·2° and from October to March 66·8°. Malarial fever is prevalent during the summer months. MINIATURE GAZETTEERS. Climate, temperature and rainfall.

The average annual rainfall in 17 years recorded at Pishín was 8·69, and at Gulistán in 12 years 7·17 inches, nearly the whole of which is received between October and March. January is the rainiest month, the average fall being 2·06 at Pishín and 1·65 at Gulistán.

History.

Before its occupation in 1878 and its subsequent assignment to the British Government by the treaty of Gandamak in 1879, Pishín always formed part of the province of Kandahár. The part which the Batézai Taríns played as the local governors, has been referred to in the account of the Taríns. After the British occupation and up to 1882, it was under an Assistant to the Governor-General's Agent, but in 1883 was combined with Quetta and Shorarúd into the administrative charge of a Political Agent, who is Deputy Commissioner so far as Pishín and Shorarúd are concerned.

Population.

In 1901, there were one town, PISHIN BAZAR, 271 villages and 10,230 occupied houses. The total population was 51,753, of whom 1,552 were enumerated in urban, and 50,201 in rural areas. Of the total, 28,258 were males, and 23,495 females. The incidence per square mile is 19, and per house 5. By religion 1,398 were Hindus, 33 Christians, 50,233 were Muhammadans, and others 89. The indigenous population numbered 48,341: males 25,659, and females 22,682. The principal tribes are Kákars, 27,690, Taríns 12,641 including 5,952 Achakzais, and Saiads 7,105. In 1901, there were also 1,158 Ghilzai nomads. All are Musalmáns of the Sunni sect, and their language is Pashtú. The principal occupation is agriculture, subsidiary to which are flock-owning, transport, and trade, the Saiads, Taríns and some of the Kákars being engaged in the last named.

Bazars are located at Bostán, Pishín, Gulistán and Kila Abdulla; and all the more important villages possess one or more shops, which can meet ordinary demands.

The most important villages are Ségi, a group of several villages occupied by the Ségi Taríns (2,491); Sanzalla comprising several hamlets (2,287); Arambi Kákozai (1,606); Alízai (1,451); Karbala (1,115); Khudádádzai (1,016); Khánzai (943); INAYAT ULLAH KAREZ (905); Habíbzai (856); Band Malézai (728); Manzari (709); Khánozai (671); Bádízai (659); Manzakai (606); KILA ABDULLA (599); GULISTAN KAREZ (587); BOSTAN (577); HAIKALZAI (577); and Kazha Viála (Barshor) (393).

Agriculture.

The soil is poor, salt efflorescence being very common; it seldom bears a crop more than once in three years. The

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sources of irrigation are the two Government irrigation works, viz.: the Khushdil Khán Reservoir and the Shébo canal, 15 streams, 813 springs and 118 *kárézes*. The average cultivated area is 1,06,227 acres irrigated, and 42,264 acres dry crop. The principal harvest is the spring or *rabi* which depends largely on the winter snow and rain; the *kharíf* or autumn crop is comparatively insignificant. The principal crop is wheat, about 62,000 acres being cropped annually; after wheat, there is a big drop to barley, 9,095 acres. Maize and lucerne are also grown in small quantities, and a considerable area is under fruit, especially in the neighbourhood of Gulistán and Kila Abdulla.

The agricultural stock (1904) comprises about 1,700 cattle and 6,500 sheep and goats; there are also some 500 indigenous camels and 300 donkeys, both of which are sometimes used in the plough. Some of the Achakzais, Saiads and Taríns possess fine horses.

Communications.

The Sind-Pishín Railway enters the Sub-division at Fuller's Camp and runs to Kila Abdulla. A branch to Quetta takes off at Bostán.

The main routes, details of which are given in table XI, Vol. B, are the Quetta-Chaman military road; the Pishín-Spéarágha section of the Pishín-Déra-Ghází Khán road; the Khánai-Khánozai section of the Khánai-Hindubágh road; and the Quetta-Gulistán road via Ghazaband.

Besides the roads, an important track connects Gulistán and Saiyad Hamíd with Burj Azíz Khán at the northern end of the Shorarúd valley; and another runs from Khushdil Khán to Barshor and thence to Háji Khán Kila through the Kwat glen whence it passes by Laghai to Murgha Fakírzai in Hindubágh. A branch from this route, taking off at Barshor, runs through Aghbarg and Shpána Tilérai to Sábúra, and thence either to Bahlolawarr in Toba or to Kadanai in Afghánistán. It is much used and is known as the Lamar Liár. A bridle path connects Gulistán with Spínätízha and Afghán territory, via the Wucha Darra.

Administration and staff.

An Extra Assistant Commissioner is in charge of the Sub-division, who has under him a tahsíldár and a náib-tahsíldár. The subordinate staff consists of a muhásib, 4 kánúngos, and 13 patwáris. There are 188 headmen. The tahsíl is divided, for purposes of revenue collection, into 14 patwári's circles: Lora Kákari, Kárézát-i-Kákari, Surkháb, Sarwésht, Haidarzai, Band-i-Khushdil Khán, Shébo Canal, Alízai, Kila Abdulla, Gulistán, Ségi, Shádízai, Barshor and Toba Kákari. The Kárézát-i-Kákari circle has two patwáris and, the combined circles of Gulistán with Ségi, and of Shádízai with Shébo Canal have one each.

The total number of levies, including headmen, is 174, of whom 77 are mounted. They are distributed in 21 posts, details

of which are shewn in table XXI, Vol. B. There are police thánas at Pishín (13 men), and Kila Abdulla (7 men), and 19 men are employed at 8 railway stations. A small detachment of troops is stationed at Pishín.

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Land revenue.

Land revenue is levied by a fixed cash assessment in irrigated areas, except in Ségi, Badwán, and the lands under the Government canals, where it is taken in kind, the Government share varying from 1/6th to 1/3rd. The fixed assessment is for 20 years from April 1899. Unirrigated tracts are included in the assessment of irrigated *mahàls*, except where very large tracts are under cultivation, which pay revenue in kind at one-sixth of the produce. The incidence on the area annually irrigated varies from Rs. 1-5-3 to Rs. 4-2-3 per acre. A tax is levied on water mills and also on cattle, but the latter in some cases is included in the land revenue assessment. The Land Revenue receipts in 1902-03, a bad year, were Rs. 54,496 of which Rs. 49,126 were realized by fixed cash assessment and Rs. 1,509 from cattle tax. In the same year the revenue from Government irrigation works, was Rs. 8,312. The hereditary lands of most of the Saiads are revenue-free.

Miscellaneous including special products.

Earth salt and crude potash are manufactured in the Ségi circle; the manufacture of the latter article is also carried on in the Gulistán circle. Chromite is worked in the east of the tahsil. Cumin grows in the Kand mountain, and wild rhubarb (*P. pushai*) in the Toba hills, Khwája Amrán, and Kand.

Bostan.—A railway station on the Sind-Pishín section of the North Western Railway 134 miles from Sibi, and the junction of the two lines which pierce the Harnai and Bolán Passes. From Bostán the railway runs through the Pishín valley to Chaman 68 miles. Bostán is connected by road with Quetta (20¾ miles) and with Pishín through Yáru Káréz by road (12 miles). It consists of a bazar and village, the former containing nineteen shops, a police and levy thána, and other Government buildings and lying to the west of the railway station. The village, to the east of the station, possesses the *kárézes* known as Chashma Chungi, Chína Barat, Káréz Mehtarzai, Kárez Háji Hárún, and Káréz Bostán, and two dry kárézes named Tor and Humai. The population numbered (1901) 577: males 311; females 266. The principal inhabitants of the village are Pánezai Kákars; their present headman (1904) is Khán Sáhib Háji Hárún who receives an allowance of Rs. 55 per mensem from the levy service.

The water supply for the station is from an artesian well and water has also been piped from springs in the Bostán *darra* in the Takatu range about 5 miles to the east. A picturesque track leads through the gorge of the Bostán *darra* to Sra Ghurgi in the Quetta valley. The exports from the station consisted in 1904 of 288 maunds of wool, 1,930 maunds of

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fresh fruit, chiefly sweet and water melons, 710 maunds of dry fruit, 6,660 maunds of wheat and barley, 20,500 maunds of *bhúsa* and 22,600 maunds of sand. Sand is sent to Quetta for railway and other works. In the same year the imports included 200 maunds of English piece goods, 845 maunds of Indian piece goods, 650 maunds of sugar, 1,860 maunds of rice, 130 maunds of molasses (*gur*) and 205 maunds of dates. The orchards cover an area of about 11 acres and contain apricots, grapes, quinces, plums, apples, almonds and pomegranates.

Gulistan (Gulistán Kárêz).—A village, 22 miles to the west of Pishín, $42\frac{1}{2}$ miles from Quetta by the Ghazaband road and 51 miles by rail, situated in 30° 37′ N. and 66° 39′ E. The place is known from the *kárêz* which was originally made by Gulistán, Hamídzai Achakzai, but subsequently passed into the hands of the Ségi Taríns and was later purchased from them by Yár Muhammad Khán and Abdulla Khán, Achakzais. This *kárêz* is one of the largest in the Pishín tahsíl and is divided into 18 *shabánaroz* or shares, of which $14\frac{10}{16}$ are owned (1904) by the Jalézai sub-section of the Hamídzai Achakzais, $2\frac{14}{16}$ by Abdur Rahmánzai Kákars, and $\frac{8}{16}$ by Saiads. A perpetual revenue-free grant of 12 *shabánaroz* of this *kárêz* was made in September 1889 to the Arzbégi family of the Achakzais.

Besides the fact that it commands several passes leading westward to Afghánistán, including those through the Wucha Darra, Tánda and Ghwazha, Gulistán's chief claim to importance lies in its fruit gardens, which cover over 99 acres, the principal fruits being the *haita* and *spin kishmishi* varieties of grapes, pomegranates, peaches, apricots, plums and figs. They are estimated to bring the owners an annual income of about Rs. 13,000. The population of the village in 1901 was 587: males 308, females 279; of which 140 were Achakzais, and 320 Kákars. It possesses two mosques both of which have rooms for strangers and *tálibs* or students. About a mile to the east is the fort, known among the people as the *chháuni* or cantonment. It actually lies in the limits of the Ináyat Ullah Kárêz village. It was occupied by regular troops up to 1883 when it was handed over to the levies. It contains a rest house, civil dispensary and quarters for a kanúngo and patwári and 4 levy sowars are located in it. To the south of the fort is the European cemetery enclosed by a mud wall which is now out of repair. Part of the fort is devoted to a primary school which was opened in 1894 but was closed in 1901. It was again opened in the beginning of 1904 and contained 25 pupils. Outside the fort is a small bazar, containing 28 shops which deal in piece goods, fruit, and other commodities. The trade of the place is chiefly carried on with Afghán territory, wool, almonds, *ghi* and raisins being smuggled through the Wucha,

Ghwazha, Tánda and other passes, or imported by arrangement with the Amír's *khásadárs*. The exports consist chiefly of piece goods, sugar and tea. Small fees are levied in the *bazar*, and a sweeper and a *chaukidár* are employed.

Close by is the Ináyat Ullah Káréz village deriving its name from the largest *káréz* in the Pishín tahsíl, which is said to have been constructed by Shér Wali, Wazír of Tímúr Sháh, from whom it was purchased by Bostán Khán, father of Ináyat Ullah Khán, Achakzai. The *káréz* is divided into $13\frac{10}{18}$ *shabánaroz* of which $6\frac{1}{2}$ are owned by the Barkhurdár family of Achakzais, their principal man being Muhammad Hasan Khán, whose father, Fateh Khán, was once the governor of Kandahár and who now receives a monthly allowance of Rs. 60 from the levy service. Saiads own $6\frac{1}{80}$ *shabánaroz* and the Parézún Kákars $1\frac{9}{80}$ *shabánaroz*. The greater part of the *káréz* is revenue-free.

Like Gulistán, Ináyat Ullah Káréz is also famous for its fruit; the orchards cover 77 acres of land, and yield an annual estimated income of about Rs. 17,000 to the owners. The quality of the peaches may be judged from the fact that the fruit of two trees was sold for Rs. 160 in 1904. The population in 1901 numbered 905: males 510, females 395, of whom 203 were Achakzais, 360 Saiads, 133 Kákars and 30 Hindus.

One and a half miles to the north is the shrine of a Shádízai Saiad, Saddíq Ján Sáhibzáda, which is much respected and is believed to cure various maladies, especially persons possessed of jinns or evil spirits.

The railway station lies $1\frac{3}{4}$ miles to the east, in the limits of Kili Lájwar, and is connected with the Gulistán fort by a cart road. A bridle path also runs from Gulistán to Spínatízha ($16\frac{3}{4}$ miles), and to Ghwazha post on the border (22 miles). The station is 38 miles from the terminus at Chaman. The imports and exports in 1904 are shown in the following table :—

IMPORTS.		EXPORTS.	
Articles.	Mds.	Articles.	Mds.
European piece goods	374	Wool	6,742
Indian do.	35	Fresh fruit	8,474
Rice	284	Dry do.	749
Sugar	226	Bhúsa	2,265
Tea	$4\frac{3}{4}$	Sundries	12,326
Sundries	22,671		

The water for the Railway station is brought in iron pipes from the Ináyat Ullah Káréz. The Railway takes $\frac{1}{36}$ of the

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entire supply, which varies according to the season from about 25,600 to 41,266 gallons a day, and for which a half yearly rental of Rs. 300 is paid. Two shops are located near the station, and the Railway owns several buildings including a rest house for their departmental officers.

Haikalzai.—A village in the Pishín tahsíl situated on the north bank of the Surkháb Lora, which is here known as the Tangai, five miles to the north-west of Pishín on the Kila Abdulla road. It is divided into two hamlets, each of which is called after the name of its headman, i.e., Báz Khán Kili and Abdur Rahmán Kili. The population numbered 577 (1901) 310 males and 267 females, of whom 313 belong to the Haikalzai section of the Tor Taríns while 40 are Achakzais, 40 Saiads, 23 Ghilzais and 160 Kákars. Some of the village lands are irrigated by the Surkháb stream and pay a fixed cash assessment, and part by the Khushdil Khán Reservoir on which revenue is levied at one-third of the gross produce. The village contains some 29 acres of Government land, without water, belonging to the Commissariat department which has been leased for the term of the present settlement to Malik Báz Khán. Drinking water is obtained from the Surkháb water channel. Each hamlet possesses a mosque, a mud structure in charge of a *mullá*. The gardens cover about 8 acres of land and contain grapes, apricots and mulberries, the fruit of the first two named being exported to Quetta for sale.

The village derives its chief importance from its proximity to the actions fought by Major-General England with the Afghán insurgents in 1842, to which reference has been made in the section on **History**. General England left Quetta on March 26th, 1842, with 4 guns, horse artillery, 5 companies of Her Majesty's 41st Foot, 1 troop, 3rd Light Cavalry, 6 companies of the 6th Native Infantry and a detachment of 50 of the Poona Horse, and met with slight opposition till he approached Haikalzai. He arrived at the entrance to the defile, which leads to the village, early on March 28th at which place he had intended to await the remainder of his brigade from Sind. People were seen on the neighbouring hills but the General was unaware that the insurgent chief, Muhammad Saddíq, was strongly posted in the pass. The rest of the story may be told in General England's own words: 'It became evident, as we approached, that there was some preparation made for resistance by the insurgents on the commanding ground which flanked our line of march at this point; and, after a rapid reconnaissance, I proceeded to attack the principal hill by four light companies, including that of Her Majesty's 41st regiment, supporting the attack by the remainder of the wing of that corps, under cover of the four guns of Captain Leslie's horse artillery; the remainder of the troops being duly distributed for the protection of the baggage.

'The enemy kept his strength concealed behind a succession of breastworks improved by a ditch and abattis, until our advance reached the crest of his exterior defence, when a crowded body suddenly sprang up, and made the contest so unequal, that it was immediately evident it could not be advantageously maintained.

'The light companies fell back, therefore, on the small supporting column of Her Majesty's 41st regiment, which, on the appearance of the enemy's cavalry, which now rushed out from behind the hills, formed square, and gallantly resisted the efforts which were made to penetrate and break it; the matchlockmen of the enemy still keeping up a sharp and destructive fire from the heights.

'To persevere in a second attack on the now developed strength of the enemy, with the small numbers I had disposable for such an operation, I deemed to be unwarrantable; and I therefore determined to move by my right to the ruined village of Bazar, three miles to north-north-east, in which direction the baggage was first ordered to proceed, and the troops followed across the plain in échelon of squares, the artillery protecting by alternate guns, and the whole covered by as good a display of cavalry as we had at command.

'The steady manner in which this movement was made prevented any close molestation from the enemy; neither did they make any attack on us during the night.

'I here discovered that 400 men, principally cavalry, had joined the insurgents' forces, from Kandahár, the day before my arrival, and that, with a view to resist us, Mahomed Sadig (*sic*) had collected also at this point, from Shoráwak and Sháwl, 500 men, and that Mirza, a Kákar chief, with 100 of that tribe, also formed part of his force; the rest of the enemy's strength was made up by the Achakzai horse, formerly in our service, by armed villagers of the neighbourhood, making an estimated total of at least 1,500 or 2,000 men. Many officers, however, consider it to have been much greater.

'I, moreover, discovered that the defences within which the enemy fought, had been works of two months' preparation, and I have seldom seen better cavalry than those, which, for *the first time*, displayed themselves, when the light companies fell back on Her Majesty's 41st, at which moment several of the enemy were bayoneted in their attack on the square of that half-battalion.

'On the morning of the 29th, it was perceptible that the insurgents had been collecting further reinforcements of armed villagers during the night, and that arrangements were being made by them on an increased scale to resist any renewed assault on our part; and it being evident that the object of my remaining in the Pishín valley was negatived, whilst its

resources and communications were thus in the hands of an enemy much stronger than myself, and that the latter could not be dislodged from the important heights he occupied without incurring severe additional losses, I felt I should best serve the views and interests of Government by falling back to my position at this place until reinforced;* and I am happy to say that this difficult operation has been accomplished, although encumbered with a train of 15,000 baggage animals and camels, and four and a half lakhs of treasure, and many wounded men, notwithstanding the constant presence of the enemy, without hurry, and without incurring the loss of any baggage or article of public property, beyond such as might reasonably happen in any ordinary march in India.'

The "principal hill" referred to is now known as the Sangar Ghundi about 1½ miles from Pishín on the Pishín-Saranán road. Native information shows that the insurgents were under the command of Muhammad Saddíq Khán, Durráni, and comprised Taríns, Achakzais, and Parézún Kákars. The leading men among them were Madat Khán, Ghaibézai, and Sálo Khán, Arzbégi Achakzais; Azam Khán, Moṣam Khán and Qádardád Parézún; Rahimdil Khán, and the three brothers Sháh Sawár Khán, Mato Khán and Yáhya Khán, Batézai Taríns; Nasrulla Khán and Barán, Haikalzais; Mansúr Khán and Mohsam Khán, Khudádádzais, and Dildár and Saifal Khán of Karbala. They occupied the low hills which lie between the Tirkha Mánda and the first water-mill on the Surkháb in the Haikalzai village, their cavalry being screened in the open ground among the hills. The spot is still pointed out where Rahimdil, Batézai Tarín was killed.

Having received reinforcements, Major-General England left Quetta again on April 26th and reported that on April 28th, 1842, he had attacked the enemy's position in front of Haikalzai and dispersed them in all directions. Native accounts, however, assert that almost all the villagers had dispersed on the approach of the force.

Khanai.—A railway station on the Sind-Pishín section of the North Western Railway, 125 miles from Sibi and 30 miles from Quetta. It is connected by cart roads with Pishín (18 miles) and Quetta (30½ miles), in the Quetta-Pishín District and with Hindubágh 45 miles, Kila Saifulla 83½ miles, and Fort Sandeman 169½ miles in the Zhob District and is a convenient point for reaching the Pishín-Déra Gházi Khán road. The adjoining village, which was established about two hundred years ago by one Ahmad, and is called after the founder's father, lies under the Zhar hills about a mile to the west of the station. The population numbered 267 (1901);

* Quetta is referred to.—ED.

males 136, and females 131; and consists principally of the Bárézai and Sulaimánzai sections of the Yásínzai Kákars. The water supply is from two *kárézes*—the Zambali and the Khánai; the water for the station is obtained from the latter. A rest house is situated on the left bank of the Gharkai Mánda about 100 yards from the station.

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The railway station gives access to the neighbouring villages in Quetta-Pishín as well as to the Hindubágh and the Kila Saifulla tahsíls of the Zhob District. The imports and exports in 1904 are shown in the following table.

IMPORTS.		EXPORTS.	
Article.	Mds.	Article.	Mds.
European piece goods ...	488	Bhúsa	7,200
Indian do. ...	144	Wheat	7,890
Cereals	800	Chromite ore	74,830
Sugar	224	Fruit and potatoes ...	1,270
Miscellaneous articles ...	1,000	Miscellaneous stores ...	2,174

The chromite ore goes to Karáchi for shipment to England.

Kila Abdulla.—A village in the Pishín tahsíl, 24 miles to the west of Pishín Bazar. It comprises two *mahál*s, the Dehsora Káréz which is said to have been constructed in the time of the Zoroastrians (*Gabrs*), and Chashma Inzargai. Originally the former belonged to the Kákars and the latter to the Áshézai Achakzais, but both were purchased from them in the early part of the 19th century by Sardár Abdulla Khán, Achakzai, who built a fort which is now in ruins, and gave the place his own name. Sardár Abdulla Khán was a man of great influence and is mentioned by Masson who visited the square castle belonging to him in the course of his travels between 1826 and 1840, and states that the Sardár had a piece of ordnance, possibly a *jinjál*, and levied duty on the *káfilas*. He was also one of the two great leaders of the rebellion at Kábul in 1841 in the course of which the British envoy was killed and the following story of his ferocity is related by Lieut. Vincent Eyre*:—'To illustrate the character of Abdulla Khán, it will be sufficient to relate the following anecdote. In order to get rid of his elder brother, who stood between him and the inheritance, he caused him to be seized and buried up to the chin in the earth. A rope was then

**The Military operations at Kábul—January 1842, with a journal of imprisonment in Afghánistán, 1843,* pp. 15 and 16.

fastened round his neck and to the end of it was haltered a wild horse: the animal was then driven round in a circle, until the unhappy victim's head was twisted from his shoulders.' The army of the Indus reached Kila Abdulla on April 12, 1839, when a battalion of Sháh Shuja's infantry was left there and withdrawn on the formation of the Bolán Rangers.

The Dehsora káréz is divided into 20 *shabánaroz* of which one *shabánaroz* was purchased for the railway station in 1888 for Rs. 7,500; $9\frac{8}{16}$ *shabánaroz* have been bought by the Huramzai Saiads, 2 *shabánaroz* the share of Ghulám Mohíuddín are mortgaged to the Punjab Banking Company, and $7\frac{8}{16}$ are in the hands of the Achakzais. Of these latter, $3\frac{1}{2}$ *shabánaroz* the personal property of Táj Muhammad Khán, who is now recognised as the head of the Achakzais in Kila Abdulla, are free from revenue during his lifetime and that of his son. The Achakzais here, who belong to the Arzbégi Kahol, are divided into two families known as the Muhammad Aslam Kahol to which Táj Muhammad belongs, and the Muhammad Akram Khán Kahol which is now headed by Ghulám Nabi Khán. Each of these claims to be superior to the other and hence they have long been on bad terms.

Kila Abdulla is divided into three main parts, the village; the railway station, fort and *serai;* and the bazar. The population of the village is 344, (males 182, females 162) and comprises 212 Achakzais, 40 Saiads, 77 Kákars and 15 others. It possesses a *masjid* in charge of an *imám*, who lives on the *zakát* or charity of the people, and three rooms for students (*tálibs*). The water supply is from the Dehsora káréz the water being stored in a tank. The village possesses ten gardens, which cover an area of over 29 acres, the principal fruits being grapes of the *haita*, *sara kishmishi* and *sáhibi* varieties, apricots, almonds and quinces. Kandahári dealers buy the fruit and export it to Quetta. It realises about Rs. 2,000 per annum. Melons and water-melons are also grown. The Bághakka hill torrent which rises in the southern slopes of the Khwája Amrán range passes through the village and joins the Máchka, a tributary of the Pishín Lora. Stone is extracted for building purposes from the Jatán Ghundai to the north of the village.

The railway station, where there is a post and telegraph office, is about one mile to the east of the village, 30 miles from Chaman and 59 miles from Quetta. It is connected with these places by cart roads and also with Gulistán (10 miles) and with Pishín (24 miles). Its importance lies in its trade with southern Afghánistán, all caravans except those conveying fresh fruit, being compelled by the Amír's orders to come to

Kila Abdulla instead of to Chaman. The imports and exports by rail in 1903 are shown in the following table :— MINIATURE GAZETTEERS.

Imports.		Exports.	
Article.	Mds.	Article.	Mds.
Piece goods	23,408	Medicinal drugs	4,228
Gram and pulse	1,988	Straw	2,604
Juári and bájra	11,564	Fresh fruits...	336
Rice	21,840	Dried ,, ...	39,032
Wheat	15,680	Wool...	43,680
Wheat flour	11,326		
Sugar	15,035		
Molasses	2,808		
Tea	1,092		
Lucifer matches	952		

The caravan serai is situated about 250 yards from the station. It was built in 1886 at a cost of Rs. 56,071, and contains an enclosure and 18 rooms in which are stationed a *muharrir* who registers the foreign land trade, a Levy jemadár and 9 footmen, and a sweeper. The fees charged are two annas for a room and 3 pies for the use of the verandah; horses 6 pies, 3 camels or donkeys belonging to a single owner 3 pies per animal, and one pie per animal in excess of that number.

The fort lies about 1,200 yards to the south of the *serai.* It was occupied by regular troops up to September 1893, when it was handed over to the Civil department. The eastern enclosure contains the Military Works inspection bungalow, and the western the police *thána*, at which one deputy inspector and 10 constables with 3 levy jemadárs, 6 sowars and 6 footmen are posted.

The bazar is situated to the south of the fort on the Quetta-Chaman cart road. It contains 59 shops, of which 9 deal exclusively in piece goods, 4 in boots and shoes ; 6 belong to goldsmiths, 3 to tailors, and 3 to dyers. All of them depend largely on the trade with Afghánistán. There is a *chaudhri* or headman and two brokers (*daláls*) who conduct the sale of Afghán goods in the bazar, receiving fees at the rate of 3 pies in the rupee. No octroi is levied, but a conservancy cess is realised which is expended in maintaining 4 *chaukídárs* and two sweepers. Drinking water is obtained from 4 wells, one of which is brick-lined and 90 feet deep. It was built by the Hindu *pancháit* at a cost of about Rs. 800. For other requirements a share of the surplus water of the Railway is obtained on an annual payment of Rs. 25 in addition to which Rs. 50 per mensem are paid to Táj Muhammad Achakzai, for a water

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channel and a tank in which water is stored. To the west of the bazar, and south of the fort is the European cemetery enclosed in a mud wall and containing 15 graves (1905).

Farther south lies a mud walled enclosure containing a brick-work grave, the shrine of Saiad Barat, an Ismáílzai Saiad of Kili Bhako in Pishín. The keeper of the shrine is now (1905) one Saiad Muhammad Kalám of Peshávar who has acquired much influence owing to his saintly and generous life. He is known as the Bádsháh Sáhib, and has erected a small hamlet, and a *masjid* with 8 rooms for strangers and two wells, and has acquired by purchase the Badál *káréz* in the Ségi circle. Strangers who happen to come to the *masjid* are fed. The shrine is famous for its miraculous cures of various diseases, especially catarrh (*zukám*), but the votaries first visit the shrine of a disciple of the saint, named Shádi Kákar, which lies on a hillock to the east. A brown goat is the usual sacrifice at Saiad Barat's shrine. The local shop-keepers contribute one anna each to the shrine every Thursday and many people visit it with offerings.

Pishin Bazar.—The headquarters of the tahsíl and sub-division of the same name, lying in 30° 35′ N. and 67° 0′ E., at an elevation of 5,167 feet above sea. It is 30 miles to the north of Quetta with which it is connected by a cart road. It is also connected by similar roads with the Yáru Káréz station, 6 miles distant, and the Saranán station, 8½ miles distant, and by an unmetalled road with Kila Abdulla, distance 26 miles. The place was established as a military and civil station in 1883. The regular troops, which garrisoned the fort, were withdrawn in June 1903, when it was occupied by the ex-Khán of Kalát, Mír Khudádád, and his retinue. The civil population in 1901, numbered 765: males 569, females 196, principally Government officials and traders. Pishín has a small but flourishing bazar, containing some 37 shops, 12 of which deal exclusively in piece goods, which are largely exported to Márúf and other parts of Afghánistán by traders who, in return, import wool, *ghí*, cumin seed and dry fruit. The sales of wool are considerable, the value of local and foreign wool exported from Pishín in 1904 being estimated at 1¼ lakhs. The traffic between Pishín and Yáru station is carried by tumtums and carts (*réhri*) the ordinary rates being 1 anna 9 pies per maund for goods and 3 annas to 6 annas for passengers.

The principal buildings consist of a *masjid*, a Hindu *dharmsála* which has two rooms for strangers, a combined telegraph and post office, civil dispensary, primary school, and a *serai* with 4 rooms and a large compound. Among Government buildings are the Political rest house, the Irrigation bungalow, part of which is used as a public rest house, police and levy lines, the Extra Assistant Commissioner's court, the tahsíl and the sub-treasury.

Octroi and a conservancy cess are levied and a small conservancy establishment is maintained. Five watchmen are also employed. Forty-five levies, horse and foot, are stationed at Pishín and there are 12 policemen under a deputy inspector.

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Attached to the Political rest house is a fine garden, laid out in 1883 under the orders of Mr. (now Sir Hugh) Barnes, the first Political Agent of the combined Quetta-Pishín District. It covers about 27 acres, produces vegetables which are sold locally, and very fine fruit. The fruit which includes grapes, apricots, plums, peaches, quinces, apples, and almonds, is exported to Quetta, Sibi, Karáchi, Bombay, Multán and Lahore. In 1903-04 the receipts amounted to Rs. 2,689 and the expenditure to Rs. 984.

The water supply, especially for drinking purposes, is defective. On the first occupation of the station, efforts were made to sink wells and dig a *káréz*, but the water of both was found to be brackish. The existing supply consists of one-third of the Surkháb stream of which one-third is used in the fort, and two-thirds in the garden. Drinking water is stored in a brick-built tank $82' \times 82' \times 3\frac{1}{2}'$ and in a small pit in front of the police station. No compensation for this water had been paid to the owners up to 1900. In that year a final settlement was arrived at whereby compensation amounting to Rs. 3,766 was paid to the villagers of Malézai, Bazar Nau and Bazar Kohna and certain arrangements were made allowing the surplus water from the Government share to the villages of Khudádádzai, Haikalzai and Karbala in the winter. The petition by the owners in which these and other terms were embodied is dated May 18.

The European cemetery lies about one mile to the north of the bazar on the Barshor road. It is an enclosure fenced with barbed wire and had 13 graves in 1904, three of which have tomb stones with inscriptions.

*Khán Bahádur Qázi Jalál-ud-dín Khán, C.I.E., occupies a garden and a house which have been leased to him by Government for a term of 99 years, at a nominal annual rental of one rupee. Mulla Ghulám Jíláni, a Ghilzai refugee, lives at Pishín and receives an allowance of Rs. 120 per mensem from Government.

Sabura.—A halting place and levy post in Toba Kákari on the Pishín-Mandozai-Kajír caravan route, 58 miles to the north-east of Pishín, 11 miles from Háji Khán Kila and 12 miles from Khasunki in the Farákhi plain. The country belongs to the Mangalzai sub-section of the Sulaimán Khél Targhara Kákars. The nearest inhabited village is 8 miles away. The levies consist of one jemadár, 11 footmen and two sowars. The post is situated on the west bank of the Shamaún

* Further details are given in Chapter III, under revenue-free grants.

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stream, about a mile to the south of its junction with the Drázand or Mandanna stream, at which point there is a good deal of cultivation. The buildings are iron-roofed and comprise an unfurnished rest house of two rooms, four rooms and a barrack for men, and stabling for four horses. The water supply is said to be somewhat brackish and is obtained from springs close by. The main caravan route between Pishín and Márúf in Afghánistán, known as the Lamar Liár, passes about 11 miles to the east through the Shpána Tilérai.

Saiyad Hamid or Said Hamid.—A railway station on the Quetta-Chaman road, 39 miles from Quetta, 15½ miles to the west of Pishín and six miles north of the Ségi rest house on the Quetta-Ghazaband-Gulistán road. The station lies within the area of the Ségi village, a large dry crop area, and derives its name from the hamlet of a Shádízai Saiad, named Hamíd which was formerly situated on the bank of the Lora river 1½ miles to the east. The railway staff and occupants of the neighbouring shop, consist of 43 persons: males 33, females 10. The station is used by the people of the Ségi hamlets lying 4 to 14 miles distant, by those of Popalzai (3 miles), Kulálzai (4 miles) and Tor Khél (8 miles). No import trade exists; in 1904 the exports consisted of a small quantity of wheat and barley, 11,673 maunds of *bhúsa*, which were sent to Quetta, 1,049 maunds of wool, and 17,947 maunds of crude potash, of which 15,063 maunds were sent to Sukkur in Sind.

Saranan.—A railway station situated on the Quetta-Chaman road, 8½ miles to the west of Pishín and 36 miles from Quetta. The site on which the station now stands, was occupied before the extension of the railway by the hamlet of Malik Yár Muhammad, Sarán Kákar, whence the name Saranán. It is sometimes erroneously called Shírínao. The surrounding area is now included in the Batézai village lying two miles to the east and is irrigated by the Shébo Canal. The village has a population of 531; males 284, females 247, mainly Batézai Taríns. To the south of the village is the shrine of Mulla Usmán, which is held in great respect by the Kákars, and which enjoys a revenue-free holding of about 4 acres of land and a free supply of water from the Shébo Canal. To the north of the station is a small bazar consisting of 6 shops, and the patwári of the Shébo Canal circle is also stationed here. To the north of the military road passing the station are a rest house, and quarters for the subordinate in charge of the Shébo Canal and Khushdil Khán Irrigation Works, and to the south is a Railway Permanent Way Inspector's bungalow. The population of the station and bazar is 87. The water of the canal is brackish, and the drinking water is generally obtained by the railway staff from the railway engines. The station

is used by the Batézai village 2 miles, Shádízai 3 miles, Khudádádzai and Haikalzai 5 miles, Bora Sháh 7 miles, Karbala 8 miles, Malézai 9 miles, Alízai 15 miles, Sanzalla 12 miles, Sémzai 14 miles, and Manzari 18 miles. The imports are small, and the exports are chiefly grain and chopped straw. In 1904, 19,034 maunds of *bhúsa* and 21,119 maunds of grain were exported to Quetta.

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Yaru or Yaru Karez.—A village and railway station on the Quetta-Chaman road, 25 miles from Quetta, 5½ miles from Pishín and 7 miles from Bostán. Some 95 years ago Yáru, a Mandan Saiad, and Mullás Azam and Saddíq, Shamozai Kákars, excavated a *káréz* and established the village. The population (1901) was 125; males 64, females 61. The village is inhabited chiefly by Kákars who also own the greater part of the 17 *shabánaroz* into which the water of the *káréz* is divided. To the west lie the levy post, (occupied by 1 daffadár and 3 sowars who are all Sargara Kákar) and the rest house. The water of the *káréz* is brackish. The station not only serves the surrounding villages but Toba Kákari, Barshor, Sarwésht and part of the Surkháb circle of the Pishín tahsíl, and is also used by caravans from Márúf and Ghazni in Afghánistán. The imports and exports in 1904 are shown in the following table:—

Imports.		Exports.	
Article.	Mds.	Article.	Mds.
European piece goods ...	3,000	Wheat	10,600
		Barley	17,300
Indian do. ...	2,460	Bhúsa	17,000
		Fresh fruit	3,000
Tea	2,400	Dried do.	2,370
		Wool	7,700
Sugar	3,000	Ghí	260

Shorarud.—The Shorarúd valley (known to the Bráhuis as Sharod) lies in the south-west corner of the District between 29°43′ and 30° 22′ N., and 66° 15′ and 66° 44′ E., and is bounded on the north by the Pishín tahsíl, on the east by the Mashélakh range, which separates it from the Quetta tahsíl, on the south by Kardgáp, and on the west by Shoráwak in Afghánistán. The tract, which covers an area of about 634 square miles, is almost square, each side being somewhat less than 30 miles. The elevation is about 5,000 feet. The most important part of the valley is a plain, about ten miles long from north to south and eight miles wide from east to west, situated in the south-eastern corner of the area.

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A strip of country in the centre of this plain, about four miles wide, is of excellent, deep alluvial soil, to which the stony skirts of the hills slope gently down.

Hills.

The whole of the western side of the valley is hilly and slopes gradually up to the crest of the Sarlat or Sarlath. Of the interior ranges, the outermost, which is a black ridge of no great height, is known as Sápu ; west of which are two smaller and broken ranges, known as Detao and Para. On the north-east of the valley are low barren, gravelly hills, forming the skirts of the Mashélakh.

Rivers.

The principal stream is the Shorarúd, which rises in Sarawán under the name of the Shírínáb, and joins the Pishín Lora south-west of Burj Azíz Khán.

As its name implies, its water is brackish, and it is not used for irrigation. Numerous hill torrents join it from the south-east and west, the important ones being the Abdikhás or Gurgína, the Kuram, and the Sébat, the latter forming the boundary between Shorarúd and Pishín on the north.

Fauna.

Shorarúd is much patronised by local sportsmen for coursing, hares being abundant. Good chikor and sisi shooting is also to be got, the latter being very plentiful in the low hills.

Climate, temperature and rainfall.

The climatic conditions are similar to those of Pishín, the summer being somewhat warmer than in Quetta, and dust storms not infrequent.

History.

The tract is said to have formed part of the territory made over to Nasír Khán I of Kalát by Ahmad Sháh, Durráni, for services rendered in the war against the Persians in 1768-69, and to have continued to be part of Kalát territory for several generations, until the early part of the nineteenth century, when Khushdil Khán was appointed governor of Pishín and Shoráwak by his uncle, Kohandil Khán, who then held Kandahár. Learning that the Mashwánis paid no revenue, Khushdil Khan assessed them at the common rate of one-tenth. The Amír, Dost Muhammad Khán, appears to have constituted Shoráwak with Shorarúd into a separate *niábat* and Shér Ali Khán increased the rate of assessment from one-tenth to one-seventh, a rate which was continued for 3 or 4 years after the British occupation.

By the treaty of Gandamak, Shorarúd was handed over to the British with Pishín, but it was placed under the Quetta Sub-division for administrative purposes in 1893. Reference has been made to its revenue history from the time it passed into British hands, in the section on Land Revenue.

Population.

In 1901, there were seven villages, and the total population was 1,062: 573 males and 489 females; the incidence per square mile was 2. The principal tribes were Mashwáni Saiads 504, Kákars 47, and Bráhuis 457, the last named comprising 56 Lángavs, and 229 Sumaláni or Sumalári Méngals. All the

people are Muhammadans of the Sunni sect. The Mashwánis and Kákars speak Pashtú and the rest of the people Bráhui; the first two tribes are either landowners or tenants, while most of the Bráhuis are flockowners and camel breeders. A few of the Mashwánis are engaged in trade in India. The most important villages include MUHAMMAD KHEL (335) and Panjpái (151).

Agriculture.

The soil of the plain is alluvial, but near the banks of the river it is saltish, and the skirts of the hills are stony. Only a small amount of cultivation is carried on from *kárézes*, the greater part being under rain crops. The number of *kárézes* is 10 and of springs 2. The principal crop is wheat, in the spring, and *judri* in the autumn. The permanent inhabitants own about 65 camels, 75 donkeys, 88 cattle, and 765 sheep and goats. Camels are generally used for ploughing in unirrigated lands. With the approaching completion of the Quetta-Nushki Railway (1905) the agricultural resources of the country are likely to develop considerably.

Communications.

The Nushki Railway crosses the southern end of the valley in Kalát territory, the nearest station being Sheikh Wásil. A path, which runs from Panjpái to Muhammad Khél and thence to Burj Azíz Khán and Gulistán in Pishín, was much frequented by caravans in pre-British days and known as the *Ráj Liár* or royal road. This track is also joined near Burj Azíz Khán by another track from Panjpái via Kuram. Panjpái is connected with Nushki by a track through Chaman Singbur. The best routes leading over the Sarlath to Shoráwak are by the Sirkao pass to Saiad Bus (*c.* 44 miles); by Wulla to Iltáz Káréz (*c.* 24 miles); and by Sápu to Zalai Gul-i-Chaupán (*c.* 25 miles). The chief passes over the Mashélakh are mentioned in the account of that range.

Administration and staff.

A subordinate revenue official of the Quetta tahsíl, generally a kánúngo, is temporarily posted at Panjpái, where there is a levy post (11 men) and another at Kuram (20 men); there are 10 *maliks*.

Land Revenue including cattle tax.

The irrigated lands under four *kárézes* pay revenue by a lump cash assessment sanctioned for nine years from 1898; the unirrigated lands and such lands as are irrigated by other *kárézes* pay produce revenue at one-sixth of the produce. The average annual revenue for the five years 1897 to 1902 was Rs. 1,899 to which grazing tax contributed Rs. 640.

Miscellaneous.

A considerable amount of crude potash is made in the valley, and exported by the Mashwánis to Quetta.

Muhammad Khel, Muhammad Kheli or Piran Kili is the most important village in Shorarúd. It lies in 30° 0′ N. and 66° 40′ E., at an elevation of 4,818, on the skirts of the Mashélakh range which is here known as the Koh-i-Kahnak; its distance from Quetta is about 42 miles. The village was

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established some nine generations back by Muhammad Mashwáni and the population (1901) numbered 335: males 174, females 161; all Muhammadans of the Sunni sect. The principal groups belong to the Mashwáni Saiads (226), and Yásínzai Kákars (47).

The sections of the Mashwánis living in Muhammad Khél are Sháh Mír Khél (16 families), Saiad Khél (20 families), Shakúr Khél (12 families), Husain Khél (15 families) and Lodín (30 families); there are also some 30 families of Ghazni Khéls whose origin is unknown but who are now amalgamated with the Mashwánis. The Mashwánis own the best part of the Shorarúd valley.

The village derives its importance from the fact that it lies on the caravan route, formerly much frequented, between Kalát and Kandahár and still known as the *Sháh Liár* or royal road and that it contains the shrine of Pír Rahím Sháh, Yásínzai, whose descendants, known as the Pírs of Shorarúd are held in some respect. The principal living representatives of the saint are Jamál Sháh and Dád Sháh with his three sons Sikandar Sháh, Mahmúd Sháh and Qádar Sháh.

The shrine is a mud-built domed building, 25 feet square; the interior is covered with fine plaster and it is decorated with looking glasses. Within lie buried the remains of Rahím Sháh, Asghar Sháh and Rustam Sháh, a disciple of Rahím Sháh. The compound contains a well, a few *sinjid* trees, a hut for the guardian and some graves. The shrine was formerly held in great respect by the people of the surrounding country and of Shoráwak in Afghánistán; and large offerings were made at it, while a guest house was maintained where all strangers were fed. Many disputes, too, were referred to the Pírs for decision. The influence of the Pírs has, however, now much declined.

The greatest drawback of the village is its water supply. Drinking water is obtained from 17 wells, 8 of which lie to the west of the village and contain brackish water, while 9, which lie to the east possess good water, their average depth being about 30 feet. There are signs of an old *káréz* which once irrigated some of the lands. But at present all the village lands depend on rain for cultivation.

The only trade of the village is in carbonate of soda, of which about 1,500 maunds are manufactured annually and exported to Sind either direct or through Quetta.

General description.

Quetta tahsil.—The Quetta tahsíl lies in the south of the Quetta-Pishín District between 30° 3′ and 30° 27′ N., and 66° 44′ and 67° 18′ E., and is bounded on the north by Pishín, on the east by the Zarghún mountain, separating it from the Sháhrig and Sibi tahsíls of the Sibi District, and by Murdár dividing it from the Sarawán country; on the south

by the Bolán Pass District and Sarawán; and on the west by the Mashélakh range which separates it from Shorarúd. This is the area now leased from the Khán of Kalát under the name of Shál, but for administrative purposes Shorarúd, of which a separate account has been given, is included in it.

In a *sanad* granted by Nasír Khán I to the Kási headmen, dated 11th of Muharram 1172 A.H. (1758 A.D.) the limits of the Shál valley proper are defined as Dokán Nari, between Quetta and Sángán, on the east; the Ajram range on the west; the Takhtúna Lora on the north, a stream that issues from the Takatu hill and joins the Shál Lora near Haidarzai, flowing past Bostán; and the valley of Kahnak, and the Landi Gharki Kalán on the south.*

The length of the Quetta tahsíl from east to west is about 35 miles and the breadth about 25 miles; its area is about 540 square miles. The tahsíl, which lies at an elevation of from five to six thousand feet, consists of a horse shoe, the two sides of which, each about twelve miles long by four broad, are the valleys of Sariáb on the east and Aghbarg on the west, and the Chiltan mountain the frog. The main valley of Quetta or Shál proper, which unites the two sides at the toe of the horse-shoe, is a parallelogram about sixteen miles by eight. From its north-east corner, the Kuchlák valley about eight miles by four, branches off, and to the east in the mountains lies the picturesque Hanna glen, which is about 7 miles long by 1 broad.

Hills.

Takatu lies immediately north of Quetta; and on the east are Zarghún and Murdár. Parts of Chiltan and of the Mashélakh also lie within the tahsíl.

Rivers.

The whole area is drained by the Shál or Quetta Lora and its confluents, which have been described elsewhere. The principal confluents are the Hanna Stream, and the Tirkha or Karanga Lora, draining the Aghbarg valley. These streams supply much of the water, which is used for irrigation in the tahsíl.

Forests.

The reserved forests are Zarghún North (9 square miles), Zarghún Central ($26\frac{13}{16}$ square miles), Mári Chak or Mara Chigh ($2\frac{55}{64}$ square miles), Mazár (2,176 acres), and Babri (975 acres), in all of which the principal tree is the juniper, and a pistachio forest ($8\frac{1}{2}$ square miles) at Hazár Ganji. Two plantations, the Dhobi Ghát and Zangi Lora, which comprise 63 acres, are used as nurseries.

Fauna.

The commonest wild beasts are the hyena, wolf, fox and jackal. Zarghún and Takatu contain mountain sheep and

* G. P. Tate's *Memoir on the country and family of the Ahmadzai Kháns of Kalát*, Calcutta 1896. Appendix IV.

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márkhor. Leopards are occasionally met with in the Zarghún and Chiltan hills. The most common game birds are chikor and sisi.

Climate, temperature and rainfall.

The tahsíl is the coolest part of the District, except Toba, and on the whole is healthy both for Europeans and natives of India, after they have become acclimatised. In summer, the variations in the day and night temperature frequently cause chills. The mean temperature, recorded in Quetta during 24 years ending with 1901, was 40 in January, the coldest month and 78·7 in July, which is probably the hottest time. The rainfall is scanty, averaging about 10½ inches.

History.

A full account of the history of Quetta or Shál, as it was formerly called, will be found in the section on **History**. The name of Shál can be traced to very early times. When first occupied in 1877, it belonged to the Kalát State and was managed by British officers on behalf of the Khán from 1879 to 1882, after which it was handed over to the British Government for an annual quit rent of Rs. 25,000.

Population.

In 1901, the Quetta tahsíl contained one town, namely QUETTA, 47 villages and 11,342 occupied houses; the total population was 44,835: 30,199 males and 14,636 females, or 83 persons per square mile. Their classification by religion is shown in the margin. The indigenous inhabitants, who are Musalmáns of the Sunni sect and speak either Pashtú or Bráhui, numbered 20,120: males 10,940, and females 9,180. The principal tribes are the following:

Muhammadans	30,213.
Hindus	9,094.
European Christians ...	3,351.
Native Christians ...	327.
Others	1,850.

Bábi	137.	Lahri	791.
Kási	1,064.	Muhammad Sháhi ...	168.
Bangulzai	866.	Rodéni	78.
Lángav	558.	Zahri	356.
Muhammad Hasni ...	39.	Kákar	7,640.
Raisáni	523.	Baloch	591.
Sháhwáni	1,664.	Kambrári	303.
Saiad	713.	Méngal	270.
Ghilzai	730.	Nichári	147.
Tarín	461.	Sarparra	41.
Kúrd	621.	Dehwar	273.

The occupations followed by the inhabitants of Quetta town are many and various. Among the indigenous natives, the principal occupation is agriculture combined with flockowning and transport.

The most important villages include Kási (1,649), HANNA which comprises several hamlets (1,568), Kéchi Bég (774), Kotwál (746), KIRANI (743), Sra Ghurgi (730), and AGHBARG (540). Almost all these have *baniás'* shops.

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Agriculture.

The soil of the centre of the valleys is good, but sáline efflorescence appears near some of the hill torrents, and along the skirts of the hills there is a considerable admixture of gravel. The permanent sources of irrigation are 2 streams, 44 springs, 136 *kárézes* and 25 artesian wells; the average annual area under wet crops is 31,883 acres, and under dry crops 11,820 acres.

The *rabi* or spring harvest is most important, the chief crop cultivated being wheat, 13,405 acres, and maize, 1,434 acres. The autumn harvest consists of maize; the cultivation of melons, potatoes, and lucerne is constantly extending as is also the planting of orchards. A rough estimate of the agricultural stock (1905) puts the number of indigenous camels at 235, of donkeys at 1,836, of cattle at 1,520 and of sheep and goats at 11,381. The Bráhuis own some fine mares.

Communications.

The railway traverses the tahsíl from Sariáb through Quetta to Kuchlák, and the principal roads are those running from Quetta to Chaman; to Sibi via the Bolán; to Kach, to Mastung; and to Gulistán, details of which are given in table XI, Vol. B. Tracks run from Quetta to Nushki and also to Sángán. Paths lead from the Hanna valley over Zarghún to Sháhrig; and from Sra Ghurgi, through the Gháratta Mánda and over Takatu, to Bostán.

Administration and staff.

The officer in charge of the sub-division is an Assistant Political Agent, under whom are a tahsíldár and a náib-tahsíldár. There are two Extra Assistant Commissioners, a Munsiff and 4 Honorary Magistrates, a Cantonment Magistrate and an Assistant Cantonment Magistrate. The subordinate revenue staff consists of a muhásib, two kánúngos and 6 patwáris and there are 132 headmen or *maliks*. The tahsíl is divided into six circles: Sariáb, Kási, Durráni, Baléli, Nau-Hisár and Kuchlák. Besides the police employed on escort and guard duties, 88 men are stationed in the Quetta town, 92 in the cantonment, 15 in the Quetta sadar thána, and 28 on the railway. The total number of levies is 101, of whom 59 are mounted. They are stationed at 8 posts, details of which are given in table XXII, Vol. B. The head-quarter levies, forming the personal escort of the Agent to the Governor-General, number 27.

Land Revenue.

A cash assessment, fixed for ten years from 1897, has been introduced in irrigated areas, and produce revenue is taken on unirrigated lands, at the rate of one-sixth of the gross produce. Taxes are also levied on water-mills and cattle. For 1901 and 1902 the average annual receipts were Rs. 62,603 of which 49,809 were realised from the fixed cash assessment, and Rs. 5,078 were contributed by grazing tax. The incidence per acre of irrigable area varies from R. 1-7-0 to Rs. 3-9-4.

Miscellaneous.

Coal is worked in the Sor range.

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Aghbarg is the most important village in the Nau-Hisár circle of the Quetta tahsíl, and lies in the skirts of the Mashélakh or Musalagh Range on the western bank of the Karanga Lora in 30° 15′ N., and 66° 55′ E., at an elevation of 5,260 feet above sea level. The valley of the same name lies between the Chiltan mountain on the east and the Mashélakh on the west, and runs north and south from Dulai to Mír Káréz, a distance of about 12 miles. The village consists of three hamlets, the most northerly being known as Khánézai, the central and largest as Mehrábzai or Loé Kili, and the southernmost as Khálozai. For purpose of revenue the village contains nine *maháls*, seven *kárézes* and two tracts of *khushkába*. The Girdi Talao rest house lies within the Zor Khushkába mahál, about 1½ miles to the east of the village. The village contains 96 houses, and the population in 1901 was 540: males 290, females 250. The principal groups are the Mehrábzai, Khánézai, and Khálozai sections of the Bázai-Sanatia Kákars, all Muhammadans of the Sunni sect. Each hamlet possesses a *masjid*, in charge of a *mullá*, with rooms attached for *tálibs* and strangers. About half a dozen wells have been dug, but the water of all but the one in Khánézai is brackish and drinking water is obtained from the Churohi káréz. The depth of the wells is about 55 feet. About two-thirds of the cultivated land is dry crop area and the remainder depends on *kárézes*.

In 1840, the village was the scene of the defeat of the Kási Irregular Horse under Lieut. Hammersley by the Bráhui insurgents who were advancing on Quetta from Mastung. The incident is thus described by Masson.* "At length a report prevailed of the rebels' advance to Berg, and Lieut. Hammersley started with the Kási Irregular Horse, to reconnoitre. On approaching Berg, he fell in with the advanced guard, and fled in such haste that two or three men of his party, worse mounted than their companions, were overtaken and slain. So well had the flight been sustained, that on reaching Quetta one or two horses fell dead upon the ground. The Kháká (*sic*) peasantry of Berg gallantly defended their property against the Bráhui spoilers, which so much disconcerted the latter that it favoured a split in their councils, and led to their retreat upon Mastung, whence they finally marched upon Dáhdar."

About 4 miles to the south of the village is a mound called the Sar Mushnai Ghundi, said to be the ruins of a village built by Mír Chákar, the Rind. The principal headman or *malik* is Khán Sáhib Majíd Khán, who receives an allowance of Rs. 50 per mensem from the levy service. He has 1

* *Narrative of a Journey to Kalát*, 1843.

dafadár and 4 sowars, and 2 jemadárs and 8 footmen under him and is in charge of the Gazaband pass over the Mashélakh Range. MINIATURE GAZETTEERS.

Three shops are kept, and there are two families of blacksmiths called Jats. The trade consists in the sale of agricultural produce and the few necessities, such as cloth, etc., required by the surrounding population.

Hanna is one of the most picturesque glens in Baluchistán lying along the Hanna stream in the Quetta *tahsíl*, and opening into the north-east end of the Quetta valley through the gorge of the same name in 30° 20′ N. and 67° 15′ E., at an elevation of 6250 feet above sea. This gorge, otherwise known as the Shál Tangi, lies 5½ miles from Quetta, and close to its entrance are a small levy and octroi post. At the north-east end it is joined by the Kánr Mánda, a dry torrent bed, up which lies a track to Sángán, via Astangi and Pír Ismáíl, the distance from Quetta being 81 miles. The lower and wider portion of the Hanna valley is about four miles long and it is well cultivated. It contains numerous orchards and terraced fields dotted among frequent hamlets and watered from the rippling stream which eventually supplies most of the water for the irrigation of the Quetta Cantonment. The valley narrows at Chashma Tangi, the Gorge of springs, between the spur of Balo Ghára on the west and the Sáhibzáda Ghára on the east. From this point the stream takes a sharp turn, running almost due east and west, and lower Urak begins. This valley again narrows to the Urak Tangi, which lies between the spurs of Zarghún, known as Chági Ghára on the east and Plina on the west. At the foot of the former are situated the head works of the Quetta water supply. A footpath ascends the Zarghún mountain from this point, following the northern bank of the stream through the Zarghún reserved forest, to Loar or upper Urak. Upper Urak was inhabited until 1893, when the village was bought up for Rs. 10,000 to prevent contamination of the Quetta water supply. A political bungalow is situated in the lower part of the Hanna valley, 7¾ miles from Quetta, and there is a Military rest house at the upper end of the lower Urak valley.

The amount of land available for cultivation is small in proportion to the abundant supply of water. At the last Settlement the area under gardens was found to be 56 acres; the irrigable area 642 acres; the dry crop cultivated area 412 acres; and the remaining culturable area 197 acres. In 1904-05 the area under cultivation was: gardens 58 acres; wet crops 711 acres and dry crops 408 acres. The principal crop is cut in the autumn and consists of maize; in spring barley is grown more largely than wheat. The people supplement their means of livelihood with the produce of their flocks and by

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selling firewood in Quetta. The total population (1901) was 1,568: males 871, females 697, of which 1,210 were Yásínzai Kákars who are divided into three branches, known as the Bárézai, the Karozai, and the Sulemánzai. The Saidzai Sárangzais, numbering 141 souls, pay their revenue through the Sulemánzai *malik*. There are 18 *kilis* or hamlets and 11 water mills in the glen, the principal villages being Sárangzai Kili, Sáhibzáda Kili, and Ghafúr Kili.

Special mention may be made of the Sáhibzádas of Sáhibzáda Kili, who are Bárézai Yásínzais and descended from one Mián Hasan whose grave and shrine, enclosed in a mud wall, is situated on a small hill above the village. The shrine and the representatives of the saint are held in great respect. In the Hanna glen they hold about 47 acres of irrigated land and $1\frac{5}{8}$ shares in water mills free of revenue; and they also possess two *shabánas* of land and water out of 90 *shabánas* in Sángán, while on the remaining 88 *shabánas* the cultivators pay them Rs. 2 per *shabána* in cash and one *kása* of grain per annum.

Revenue was not levied from the Yásínzais of Hanna till 1884 when Lieut. Dupuis of the 98th North Stafford Regt. was killed by Mauládád and other Kározai Yásínzais in the Zarghún mountain at a spot known as Pulkai about 50 yards above the present water tower. In consequence of this outrage, revenue at the rate of one-fourth of the gross produce was imposed during 1884-85 in addition to the punishment awarded to individuals, but it was reduced to one-sixth from April 1885, and a fixed cash assessment was substituted in 1897.

Kirani is a village lying five miles west of Quetta on the skirts of the Chiltan range and is said to derive its name from a defile lying near the village known as Girán Nai, or Krán Tangi. The village comprises the *maháls* under the Naurang, Malak, Kiráni and Mast *kárézes* and also Karakhsa, and is said to have been established, some seven generations back by Khwája Wali, a Maudúdi or Chishti Saiad, whose grave with that of his son, Mír Sháhdád, lies enclosed in a mud wall in the middle of the old grave-yard. The Khwája is credited with numerous miracles; the pool where the ceremony of washing his corpse was performed is situated in a garden belonging to one Rasúl Bakhsh and its water is said to be efficacious in curing all kinds of diseases, especially fever and venereal affections. To the west of the village lies the Kiráni *kárés* which is said to date from the time of the Zoroastrians and behind the site of the existing village lie the ruins now buried of an old village where earthen pots of various kinds and iron arrow heads have been unearthed. Close to this is a solitary mulberry tree, called *Yaka tút*, which, the people believe, has stood there from time immemorial.

The village possesses 157 houses and had a population

(in 1901) of 634: males 355 and females 279. The principal inhabitants and landlords are Saiads (194), servile dependants (167) and Lahris (112). The Saiads are divided into three sections: Ismáílzais, who occupy the northern and north-western part of the village; Faizullázais, living in the south-western quarter; and Purdilzais, who inhabit the eastern quarter. There are four *masjids*, and four guest houses are maintained. The village possesses three shops belonging to Hindus from the Punjab, one shop kept by a Muhammadan, and three goldsmiths.

No industries are carried on but silk embroidery of a superior kind is done for home use. The wealth of the village consists in its fruit culture; the gardens cover more than 77 acres and include 27 vineyards and 34 mixed gardens; the latter contain mulberries, figs, pomegranates, apples, apricots, plums and peaches. Many varieties of grapes are grown and fine melons are produced. The fruit and melons are generally sold for a lump sum to dealers, who retail them in the Quetta market.

The Saiads of Kiráni have always been held in great respect not only by the people of the District, but so far afield as in the Marri and Jhalawán countries. The Quetta branch of the Murree Brewery Company, Limited, is situated within the limits of the village.

Situation and climate.

Quetta (*Kwattah* or *Shál*), the capital of the Baluchistán Agency and head quarter station of the Quetta-Pishín District, lies in 30° 10′ N. and 67° 1′ E., at the northern end of the valley of that name and at an elevation of 5,500 feet above the sea level. It is now one of the most desirable stations in northern India, and is connected with India by the North-Western Railway, 727 miles from Lahore, and 536 from Karáchi. A military road connects it with Pishín, 30 miles, and thence with Déra Gházi Khán in the Punjab by the Pishín-Déra Ghází-Khán cart road, a distance of 270 miles.

The place consists of the native town on the south-east, the civil lines on the south-west and the cantonment on the north, the first two being separated from the latter by the Habíb Nullah, which has been named "The Thames" by Europeans. Owing to its recent growth, it has been possible to lay out the station on systematic lines, of which the excellent broad roads are a feature. The Lytton road, a fine avenue forming a continuation of the military road from Sibi, which traverses the Bolán Pass and passes through the western part of the civil lines, is the finest and most picturesque.

The Station as a whole was planted out by Mr. (now Sir Hugh) Barnes, who was placed in charge of Quetta after the return of the troops from Kandahár in 1881 at the end of the second Afghan campaign. Previous to this, Quetta was practically treeless, though in the surrounding villages there were

apricots, mulberries, white poplar, and possibly a few peaches in Kiráni. The plane, the Kábuli willow, the weeping willow and the Lombardy poplar did not exist.

With Sir Robert Sandeman's consent, Mr. Barnes decided to plant out the station, and two or three hundred camel loads of cuttings of various trees were obtained from Kandahár and planted thickly along the road sides; the Residency garden was also stocked with Kandahár peaches. The wide ride at the side of the Lytton Road was made at the same time by taking a strip from each of the compounds as far as the Commanding Royal Engineer's Bungalow, to which point the Civil Station then extended. A few years later Mr. Barnes also planted Woodcock Spinney and a good deal of the wood below the Polo ground. In all this work Mr. Barnes was greatly assisted by Mr. Ingle, then Treasury Officer.

The town lies beneath the slopes of Murdár, the mountain which bounds the Quetta valley on the east; to the north, but further off, are to be seen the long straight line of Zarghún and the peaks of Takatú; on the west appears the great shoulder of Chiltan. Looking north-westward, the out-line of the Toba hills is to be seen on a clear day across the low Mashélakh Range.

The climate of the place is extremely dry and, on the whole, healthy for Europeans, though the sudden changes in the temperature necessitate precautions against 'chills.' An abundant supply of good pipe water, and attention to sanitary arrangements have resulted in a considerable decrease in enteric fever for which the place at one time had an unenviable reputation. The winter is very cold, the thermometer frequently falling below freezing point. The spring, which commences in March and the summer, which ends early in September, are aggravated by violent storms of wind, which bear with them clouds of dust. The autumn is calm and at this time the climate is deliciously clear, cool and bracing. In summer the heat is never intense and the nights are always cool. The most picturesque time in Quetta is the spring, when the hedges are pink with Persian roses, and the blossom on the fruit trees gives the place a Japanese appearance. Rain and snow occur between December and March, at which time the cold is specially trying to natives of India.

Population.

Before the British occupation in 1876 the town, which clustered round the *míri* or fort, contained about 4,000 inhabitants. In the interval between 1876 and 1891, when the first census was made, a rapid increase took place and in the latter year the number of souls was 18,802 of which 7,500 were in the cantonments, and 11,302 in the civil lines and railway limits. In 1901, there were 6,925 occupied houses and the total population was 24,584: males 19,151, and females 5,433. The cantonment contained 11,067 and the civil town 13,517 souls.

The population is still rapidly growing. Its classification by religion is shown in the margin. The increase of population in the cantonment is due to additions, which have been made to the garrison. As the garrison increases, a corresponding rise always occurs in the civil population, nearly the whole of which is non-indigenous.

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European Christians ...	3,445.
Native Christians ...	233.
Muhammadans	10,399.
Hindus	8,678.
Sikhs	1,646.
Parsis	145.
Jews	38.

Persons of almost every nationality in India are to be met with in the town, but the majority of them are from the two adjoining provinces of the Punjab and Sind. Punjábis, and Sindis, with a few Europeans and Parsis, monopolise almost all the trade and the educated professions, and fill most of the appointments in the local Government offices. The principal occupations recorded at the census of 1901 included (*a*) persons in the service of the State in the Civil and Military Departments; (*b*) persons in household and sanitary service; (*c*) persons engaged in commerce and trade including shopkeepers dealing in various commodities; (*d*) artisans; (*e*) labourers; (*f*) carriers; and (*g*) agriculturists.

During 1901-02, the number of births recorded in the civil town was 106 and of deaths 343; in 1902-03, the figures were 152 and 316 respectively. The most obvious cause of the large difference between the birth and death rates, is the fact that in the majority of cases, native women, when about to be confined, are sent home to India. The causes of death are not recorded but fevers of various types in summer, and pneumonia and other chest diseases in winter probably account for the majority.

Local history.

Under its ancient name of Shál, the town has for many centuries been a land-mark in the history of Afghánistán and northern India. The first European traveller, who is known to have visited the place, was Masson who passed through it in 1828, and who noticed that the town was located round the *míri*, (now the arsenal) which was surrounded by a slight mud crenated wall. At this time the town comprised about three hundred houses; the bazar was tolerably well supplied, and was a fair one for a provincial town.

Eleven years later, when the army of the Indus reached Quetta, Shál became the head-quarters of a Political Agent and continued as such up to October, 1842, when the place was evacuated. The Political Agent's house appears to have been situated on the site now occupied by the Principal Medical Officer's bungalow (1904), and to the west of the house of the General Officer Commanding. At this time Quetta formed an important link on the line of communication with India, and was subjected on more than one occasion to attacks from the local tribes. The most severe of these was one made on June

23, 1840, by a *lashkar* of about 800 men under Gafúr, Pánézai, which attempted an assault but was driven off in about three hours, with the loss to the British of only two Baloch gunners and one of the 1st regiment of sepoys wounded. The enemy, however, lost heavily, 22 being killed and three taken prisoner, whilst a number were carried off wounded. In the following month the town was invested by the insurgent Bráhuis from Kalát for a week but, owing to dissensions in the camp of the enemy, the attempt was finally abandoned.

Dr. Bellew visited Quetta in 1872 and found it in a state of decay and this was the condition of the place when the second occupation took place in 1876. At this time the *míri* was occupied by a small garrison of the Khán of Kalát's troops, consisting of a gun's crew, a company of infantry and 20 mounted men, but in 1877 the tragic events connected with the murder of Lieutenant Hewson and the wounding of Lieutenant Kunhardt and Captain Scott caused it to be occupied by British troops. The native town was afterwards removed to its present locale and the site of the *míri* was converted into an arsenal.

The next few years were occupied in acquiring land for the new cantonment and civil station and in the construction of lines, barracks and other buildings. Sir Thomas Holdich, writing of Quetta as it was in 1884 and contrasting it with that of 1878 remarks :*—"It is always interesting to note the process of evolution of a frontier town. Cities do not spring up in the East like mushrooms. The process is slow, for nothing but the necessities of Government leads to development. There is little, if any, private enterprise concerned, especially on the part of Europeans who are nowadays more than ever loth to sink any portion of their capital in the land of strangers, so that house property all through India is rapidly passing into the hands of natives." Yet the Quetta of 1884 was a very different Quetta to that of 1878. It was more than half-way to the Quetta of 1889. The basis of its construction was (and is) mud. The Residency of 1884 was but a superior sort of bungalow built of materials which largely suggested mud. The walls of its compound were (as were the walls of the infant station everywhere) uncompromising mud. Such houses as then existed possessed roofs which, like the roofs of most of the large homes in Western Afghán villages, centred in a dome, and the dome was built of sun-dried mud bricks. This construction saves the use of timber in a country where timber is scarce.

"Some of the poplars, which are now such a feature in the Quetta landscape, were already well grown, but all upper Quetta, where now stands York town and the infantry lines,

* Sir Thomas Holdich, *The Indian Borderland*, pages 101-2.

was as bare as any other plain around Pishín, and a few clumps of crabbed-looking mulberry trees, with a sprinkling of apricots denoted the position where once stood the aboriginal villages of the District. I believe that the Quetta Club existed in 1884 much as in its present form. There are certainly indications that it might have existed then, but, like the Residency, the comforts and luxuries of its interior were enfolded in an envelope which was but a superior form of mud casket. The crown of Quetta was the *míri*. The *míri* has been the fortress of Quetta from time immemorial, and the basis of the fortress is what was probably a mud volcano in days that are prehistoric. It is now a strong position looking towards the lines of Quetta's defences to the west, where no such lines existed in the days of which I am writing."

Owing to the severe winter of 1891, many of the mud domes collapsed and the walls of several houses sank with the result that, in course of time, the neat iron roofs and railings of the present day took their place.

Acquisition of land.

The land on which the town now stands was bought by Government between 1878 and 1883, and was allotted to such of the old inhabitants as were turned out of the fort, and to others who wished to settle in Quetta. The total area purchased for Government purposes was about 3,754 acres of which 3,496 acres were in the cantonment and 258 acres in the Civil town. The total amount paid for both the land and water supply was Rs. 2,54,848 out of which Rs. 2,15,201 were for the cantonment lands and Rs. 39,647 for the Civil town. A large portion of the cantonment consisted of waste stony land of not much value, while the whole of the land in the civil station was valuable. The cost of the cantonment lands included a sum of Rs. 13,000 paid for the Durráni Káréz required to provide the cantonment with water, Rs. 5,000 paid for clearing and repairing it, and about Rs. 4,600 for enclosing burial grounds and providing fresh water channels.

Municipality.

Under the Khán of Kalát's administration, octroi and transit dues had been levied on imports into the town and the sums thus realised were used, after the British occupation, for sanitary and other purposes. The transit dues were very soon abolished and a conservancy cess was levied in 1878, the management of the funds being first entrusted to the Assistant to the Agent to the Governor General and then to the Treasury Officer at Quetta, under the control of the Political Agent, who, in important cases, consulted a body of men known as the Quetta Pancháit, which comprised the leading men from among the Indian mercantile communities of Quetta. In 1894, a paid secretary was appointed to the municipality who was also placed in charge of the civil works in the District. The title of municipality was meanwhile given to the organiza-

MINIATURE GAZETTEERS.

tion which thus grew up, but, though for purposes of collection of octroi certain boundaries had been laid down, its definite limits were not promulgated till October, 1905.* In 1888, the Government of India directed that, subject to the control of the Agent to the Governor-General, all State rights in waste and unclaimed land situated within the municipal limits might be assigned to the Quetta municipality, provided that the land yielded no land revenue and, that it should not be alienated by the municipality without the sanction of the Agent to the Governor-General, and further that any land required for State purposes might be resumed by the Government without payment of compensation to the municipality.

Matters continued thus till the Quetta Municipal Law came into force on the 1st of October 1896. On October 17th the first municipal committee was appointed, consisting of the Political Agent as chairman, and five ex-officio and four nominated members. Since then the number of members has been increased and in 1905 there were five ex-officio, and ten nominated members, with the Political Agent as chairman and the Assistant Political Agent as vice-chairman. There is also a paid European secretary.

Municipal Income.

Octroi and conservancy cess form the principal sources of revenue, which are supplemented by taxes on dogs, and hackney carriages, water fees, and the rent and proceeds of municipal property. The average annual income during the five years ending with the 31st of March, 1902, was Rs. 1,71,828, of which over 61 per cent. was realised from octroi; in 1904-05 the receipts were Rs. 2,45,532 of which 58 per cent. was contributed by octroi.

Contributions.

Amongst the heaviest charges on the income of the municipality are the contributions made to the cantonment fund, in the shape of one-third of the net license fees on hackney carriages and one-half of the octroi receipts after deducting the expenses of collection and all refunds. The payment is made on the ground that the municipality owes much of its prosperity to the proximity of the cantonment, and the sum paid annually has risen from a fixed sum of Rs. 2,400 paid up to 1883, to Rs. 61,942 paid in 1904-05.

Expenditure.

Besides these contributions the principal items of expenditure are on police, conservancy, educational establishments, contributions to hospitals and dispensaries, water supply, drainage and public works and repayment of loans made by Government. The average annual expenditure in the five years ending with March, 1902, was Rs. 1,70,352 and in 1904-05 Rs. 2,09,005. On March 31, 1905, the unpaid balance

* Agent to the Governor-General's Notification No. 4910, dated the 17th October, 1905.

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Cantonments.

of the loans incurred by the committee for public improvements was Rs. 24,501.

As already mentioned, 3,496 acres of the land purchased for Government between 1878 and 1883 were included in the cantonments, the boundaries of which were defined for the first time in March, 1885. Since then the cantonments have been largely extended, and in 1904 covered an area of 14½ square miles, the boundaries having been published in the Agent to the Governor-General's Notification* No. 1103, dated March 8th, 1904. A further addition of 1,580 acres of waste land on the north side has been made in 1905. About 1,034 acres of the land included in the cantonment are under cultivation. They are leased annually for a fixed cash rental. The cantonment authorities own $\frac{1}{12}$th of the Tázi Káréz; $\frac{8}{13}$ths of the Hanna channel, $\frac{13}{28}$ths of the Habíb stream, and the whole of the Durráni, Sáhibzáda, Lál Khán and Abás Khán *kárézes*. The offices of Treasury Officer and Cantonment Magistrate of Quetta, were combined from 1883 to 1886, when a full time Cantonment Magistrate was sanctioned, an Assistant Cantonment Magistrate being added in 1904. The Cantonment Magistrate is secretary to the cantonment committee, which manages the funds of the cantonment. The Political Agent is an ex-officio member of the committee and he may appoint any Magistrate of the first class, who is also a Justice of the Peace, to represent him. The sources of revenue include the share of octroi and hackney carriage license receipts paid by the municipality; water fees imposed in April, 1889, a dog tax introduced in July 1889; income from lands and gardens, and fees, fines and forfeitures. These are supplemented by grants-in-aid. During the five years ending with the 31st of March, 1902, the annual average receipts were Rs. 84,104; in 1904-05 they were Rs. 1,24,476. In the latter year octroi contributed about 50 per cent of the total revenue, the income from land about 20 per cent, the grant-in-aid was about 10 per cent, and conservancy cess about 6 per cent.

The principal objects of expenditure are the conservancy and administrative establishments, police, medical institutions and gardens; also tree planting, public works and the maintenance of certain roads. During the five years ending with 1901-02 the expenditure averaged Rs. 82,121 per annum; in 1904-05 it amounted to Rs. 97,638. In the latter year the cost of conservancy was about 50 per cent; of administrative establishments 8 per cent, and of police about 18 per cent of

* This notification has been superseded by the Agent to the Governor-General's Notification No. 5019, dated the 29th of October 1906, which defines the limits of the Cantonment and is reproduced in Appendix VI.

the total. The population of the cantonment, apart from the military, is very small as there is no *sadar* bazar, the only bazars being small ones attached to the different corps.

Water supply.

The question of supplying Quetta with water in pipes was first mooted towards the close of 1886, when it was suggested that the Military department should co-operate with the Civil department and the North Western Railway, and that a general scheme should be prepared to supply the wants of the cantonment, railway, civil lines and the bazar. It was ultimately decided to obtain the supply from Urak, where a mountain torrent, containing a plentiful supply of water issues from the Zarghún mountain. Here are the head works consisting of a well, in which the water is filtered, and a regulating apparatus etc. The main is divided into two branches, one leading direct to Quetta, the other to a large tank close by where a supply of water is constantly maintained in order to fill the main to Quetta, whenever the water supply from the stream is cut off, owing to floods or to carry out repairs. The original main is a 7″ cast iron pipe; and leads the water to a reservoir near Quetta and 11 miles from Urak. The reservoir consists of 4 masonry tanks, each capable of containing 37,500 gallons, the four combined holding 2 days' supply for the whole of Quetta.

The anticipated daily supply obtainable by the original scheme was 750,000 gallons but the actual supply has only been 600,000 gallons. The Municipality has a claim to 300,000 gallons per diem, the Railway to 150,000 gallons and the balance is used in the cantonments. The work was completed in 1891, but additional storage tanks were built in 1894-95. The capital expenditure up to March 31, 1901, was Rs. 7,32,832, of which Rs. 6,14,926 were paid by the Military, Rs. 51,087 by civil works (Imperial), Rs. 41,278 by the municipality and Rs. 25,091 by the North Western Railway. The expenditure includes Rs. 10,000 paid to villagers in Upper Urak as compensation for the removal of their village which lay within the catchment area of the supply. The annual charges for maintenance have averaged Rs. 6,185, of which the military have paid Rs. 5,064, the Railway Rs. 239, and the municipality Rs. 882. The water is annually examined by the Chemical Examiner to the Punjab Government whose reports have always been favourable.

*Rules for the distribution of water supply in the town were issued between 1892 and 1894, and in August, 1892 it was decided that with a few exceptions all surface wells in the town should be closed.

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* They are contained in paragraphs 22-28 of the *Municipal Memorandum*, (1895).

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Owing to the extension of cantonments it was proposed in 1899 to lay another 7″ main with the object of increasing the supply by about 6,90,000 gallons, and this work has now been nearly completed, the total cost incurred up to April 1905, when a portion of the work was still in progress, being Rs. 3,40,132-3-11. The Quetta municipality has undertaken to purchase any surplus water from this supply, which the military authorities may have at their disposal and which the municipality requires, at the rate of annas $5\frac{1}{2}$ per 1,000 gallons.

Drainage.

The site on which the cantonment stands has a gradual slope from the north-east, and rain water is carried off by four main *nullahs*, all of which fall into the Sariáb Lora. The civil station lies rather low and owing to the large quantity of water brought down from the hills for irrigation purposes the sub-soil is waterlogged to remedy which large open channels have been constructed.

The work of constructing brick drains in the town was begun in 1888-89 when a sum of Rs. 4,500 was expended from municipal funds. In 1892, the medical authorities represented the urgent necessity of improved drainage and, in 1893-94, a further sum of Rs. 10,000 was spent from the same funds. In May 1894 the Government of India sanctioned a loan of Rs. 64,000 bearing interest at the rate of $4\frac{1}{2}$ per cent and repayable by annual instalments of Rs. 10,000, to enable the municipal authorities to carry out an extended drainage scheme by which masonry drains were to be provided in almost all the municipal streets. The work was commenced in 1894-95 and completed in 1895-96 at a total cost of Rs. 76,901 of which Rs. 12,894 were paid from the ordinary municipal revenues.

During 1897, Mr. Pottinger, the Engineer member on the Sanitary Board of the Bombay Presidency, visited Quetta by invitation and, after an inspection, reported that, though surface drainage was almost always a mistake and a system of underground drainage preferable, the Quetta civil bazar compared favourably with similar bazars at Poona, Ahmedábád and Belgáum. He made certain suggestions for improvements, the principal one being the provision of a masonry drain in the Habib Nullah. The cost of the suggested improvements was estimated at Rs. 33,000 and it was decided to execute them by sections. Between 1896-97 and 1903-04 a sum of Rs. 37,623 was expended for these purposes.

Commerce and trade.

Since its occupation by the British, Quetta has rapidly grown into a commercial centre of importance, and trade converges on it from Kalát, Seistán and Southern Afghánistán. Very little local produce is exported, except fresh fruit, the exports consisting for the most part of commodities which come from places outside

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the District. The imports are largely consumed in the town itself, but some of them find their way to Kalát and Seistán. The total weight of imports by Railway during 1893 amounted to 10,93,600 maunds and of exports to 1,43,360 maunds while in 1903 the figures were imports 15,74,272 maunds and exports 3,87,212 maunds. The following table gives the principal items of export and import in each year :—

	IMPORTS.		EXPORTS.	
	1893.	1903.	1893.	1903.
	Maunds.	Maunds.	Maunds.	Maunds.
Coal and Coke	20,860	1,02,564	56	10,416
Cotton, raw	336	588	...	28
Indian and European cotton manufactures	19,824	20,132	504	924
Drugs	2,520	1,176	1,400	2,772
Hay, straw, and grass	1,17,040	1,44,368	112	38,396
Fruit and vegetables, fresh ...	...	9,604	...	5,796
Grains	2,60,568	3,81,612	16,800	41,574
Kerosine oil	6,888	10,360	84	140
Other oil	3,752	252	56	...
Dried fruits and nuts	6,580	5,152	4,704	2,632
Ghí	2,940	7,140	4,340	1,512
Salt	3,696	3,584	84	168
Sugar and gur	30,072	37,772	532	1,400
Tea, foreign }	812	896	28	196
,, Indian }		2,996		84
Wool, raw	84	1,232	20,300	16,016
Firewood	68,236	2,65,496	616	1,484
Piece goods European and Indian	2,016	2,296	252	392
Lucifer matches	392	756	...	84

The only manufactory in the town is the St. John Flour Mills, details about which will be found in the section on arts and industries.

Education.

The educational wants of the town are well supplied. It possesses the schools noted in the margin. There is a boarding house for Pathán boys attached to the Sandeman high school and the construction of a hostel for sons of chiefs is under consideration. The Mission establishments maintain a school for Hindu and Muhammadan girls, and also separate schools for sweepers. The

School.	Date of establishment.	No. of pupils on 31-3-1904.
Sandeman high school ...	1882	346
Lady Sandeman girls' school	1889	94
European station school ...	1888	44
Brahmo aided school ...	1899	117

Pársis have recently (1904) established a school for the children of their community.

Civil and Military Officers.

As the headquarters of the Local Government and of the 4th Division of the Western Army, the town contains a large official element. Besides the Agent to the Governor-General and his staff, the civil officers stationed here are the Revenue and Judicial Commissioner, the Political Agent, the Assistant Political Agent in charge of the sub-division, the Extra Assistant Commissioner in charge of the town, the Municipal Secretary, the Treasury Officer, the District Superintendent of Police, the Civil Surgeon, Superintendent of Post Offices, Assistant Superintendent of Telegraphs, the Cantonment Magistrate, the Assistant Cantonment Magistrate, and the Irrigation Officer. The strength of the garrison has been detailed in the section on **Army**. The General Officer Commanding is assisted by two Assistant Adjutant Generals and a Deputy Assistant Adjutant General. Other members of his staff are the Principal Medical Officer and the Commanding Royal Engineer of the Division, who is also the Secretary to the Agent to the Governor-General in the Public Works department; the Garrison Engineers of Quetta and Pishín are in charge of the Civil works.

Public Institutions and buildings.

Quetta Club.

The Quetta Club and grounds, which cover an area of about 10 acres, are the property of the Local Government by whom they were leased to the club committee in 1891 for a period of fifty years. The institute building and the ball room, which are situated in the same grounds, are the property of the municipality on whose behalf they were leased to the Club in 1895, for a period conterminous with that of the Club lease.

Staff College.

A Staff College is being constructed on the Hanna road about a mile from the north-east corner of the old cantonments, and about 3 miles from the Quetta club. The College and the quarters attached to it will cover about 70 acres. Quarters have been authorized (1905) for a Commandant, a Personal Assistant to the Commandant, 5 Professors, and for 18 married and 30 unmarried officers attending the college. The estimated cost is about 6 lakhs and the work will, it is hoped, be completed by the end of 1906.

Soldiers' Park and Club.

The idea of a Soldiers' Park was started in May 1903, shortly after the arrival of Major-General H. L. Smith-Dorrien, C.B., D.S.O., and originated from him. It was commenced by voluntary labour from the troops. The site selected was a waste piece of some 67 acres in a central position near St. Mary's Church. The grounds are arranged in terraces, and young fruit and other trees have been planted in large numbers, so that in time it is hoped to make the gardens self-supporting. Funds for the purpose have been obtained by subscriptions from regiments and individuals.

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In July 1905, the Government sanctioned a loan of Rs. 35,000 at 4 per cent interest to be repaid in three years, which had been asked for to build and equip a portion of a proposed soldiers' club. This building, when completed, will cost a lakh of rupees, but the refreshment end of it is all that is being built at present. It will comprise supper, billiard, reading and recreation rooms, a theatre, lavatories with hot and cold baths, and a separate building close by for a women's club. When the refreshment portion, now being built, is completed, it is hoped that the soldiers of the garrison will join, paying an entrance fee and small monthly subscription. The club will be governed by a committee consisting of the General Officer Commanding the 4th (Quetta) Division and the Officers Commanding the British Units in Quetta, while the actual management will be undertaken by a working committee of non-commissioned officers and men, the chief idea being that the soldiers should manage their own affairs, as far as possible, in the same way as the members of an ordinary civil club.

Gymkhána.

The grounds now known as the gymkhána were formerly called the *chaman* or common, and were used as a grazing ground for the Khán of Kalát's herd of horses. Mír Khudádád made over the ground to Sir Robert Sandeman personally in 1877 and the latter permitted it to be used as a recreation ground, and had the first pavilion erected from Agency funds. From this time the ground came to be known as the gymkhána. The ground was extended in 1894 and 1897, the cost being met from provincial funds. In 1899, an artesian well was sunk at a cost of Rs. 928 and the water was leased to the gymkhána committee for an annual rent of Rs. 40. The ground is now under the supervision of the Political Agent subject to the direct control of the Agent to the Governor-General, and the latter's sanction is required to the levy or alteration of the fees charged for race-meetings, etc. The total extent of the gymkhána ground is about 83 acres. The total distance round the race course is 1 mile, 1 furlong, and 103 feet, and the length of the straight run from the road by the railway is about half a mile.

Medical Institutions.

Besides a large general hospital and a hospital for native troops in the cantonment, Quetta possesses a civil hospital and dispensary to which are attached a separate building for Railway employees, and a ward for female patients; there is also the Lady Sandeman Zanána dispensary supported by the Countess of Dufferin Fund, contributions from local funds and private subscriptions. The Church Missionary Society maintains a hospital for men and the Good Shepherd hospital for women is maintained by the Church of England Zanána Missionary Society.

Cemeteries, old and new.

Some difficulty has been experienced in tracing the graveyards which mark the British occupation of Quetta between

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1839 and 1842. Dr. Bellew who visited Quetta in January, 1872, records the following information:—'On approaching Shál we made a détour to the right to avoid a wide extent of flooded fields, and passed an extensive graveyard, close to which, on an open flat of ground, was pointed out to us a walled enclosure containing the graves of the Europeans who died here in 1839-40. The wall is very low, but in good repair, and the sacred spot appears to be respected by the natives. Not far from it are the remains of Captain Bean's house, when he was Political Resident here. Though roofless, the shell is not very much damaged, and might be easily restored.'* Dr. Bellew appears to refer to a site lying to the south-east of the Kási village not far from the spur of the Murdár Range, called the Kuchnai ghar, where a mud walled enclosure in a ruinous state is pointed out by the villagers as the European cemetery of 1839-42 and is still known as the *Frangiáno Jár* or European enclosure. The ground inside is now (1905) level and no signs of graves are visible. Another cemetery is said to have existed at a place close to the fort known as the Angúrí bágh, but no trace of it now exists.

Since the occupation of Quetta in 1876, two cemeteries have been utilised; the old one lies to the east of the Lytton road, at its point of junction with Haywood road and contains, among others, the graves of Lt. J. Hewson, R.E., who was assassinated at Quetta on July 26, 1877, and of Captain H. F. Showers son of Major-General St. G. D. Showers, C.B., who was killed at the Uzhda Psha pass near Dirgai on March 29, 1880. The new cemetery lies to the north-west of the fort, and was consecrated in October 1882, a further portion being subsequently added and consecrated in 1893, and again it was enlarged and consecrated in October 1900. Among others are to be seen the graves of Lt. G. A. Dupuis, 98th North Stafford Regiment, who was killed by a Yásínzai Pathán on Zarghún on May 25, 1884; of Sir Oliver B. C. St. John who died on June 3, 1891; of Sir James Browne who died on June 13, 1896; and of Lt.-Col. Gilbert Gaisford, killed by a fanatic at Smállan on March 15, 1898.

The Pársi and the Maiman burial grounds are on the jail road, and the Hindu burning place is on the Barnes road. The Jewish burial ground is close to the European cemetery.

Sandeman Memorial Jirga Hall.

The Sandeman Memorial Hall is situated on the Bruce road and stands in the centre of well laid-out grounds. The building was designed by Colonel Sir Swinton Jacob, R.E., of Jaipur and is entirely oriental in style. It is a double storeyed building and has five domes, the largest of which is in the centre and covers the large hall of audience; it is similar

* *From the Indus to the Tigris*, page 96.

to that in the Taj Mahal at Agra. The floor is of marble and the teak wood doors are all highly ornamented and filled with coloured glass. The interior is ornamented with designs supplied by the School of Art, Lahore. The building was erected in 1895-99 at a total cost of Rs. 1,16,305 including Rs. 8,000, the cost of the site. Of the total amount Rs. 50,612 were raised by private subscriptions and the balance was contributed by Imperial Revenues Rs. 17,661; Special or Provincial Revenues Rs. 13,781; and Local Funds Rs. 34,251. The building is maintained from Provincial Revenues and the grounds are in charge of the municipality. Sir John Collier's picture of Sir Robert Sandeman, of which a replica is to be seen in the Residency, hangs in the hall.

On the east of the Sandeman Memorial Hall is a bronze statue of Sir Hugh Barnes, K.C.S.I., K.C.V.O., who came to Baluchistán in 1881 as Assistant to the Agent to the Governor-General and served for more than twenty years in the Province as Political Agent, Quetta-Pishín, Revenue Commissioner, and finally as Agent to the Governor-General and Chief Commissioner. The statue stands on a marble pedestal and was made by Mr. W. Onslow Ford. Its total cost was £1,564, the whole of which amount was raised by public subscription.

Library and museum.

Adjoining the Memorial Hall grounds is a building containing the library and museum which is being constructed (1905) from a special grant of Rs. 55,000 made by the Government of India. The Sandeman library which has existed since 1885, and is at present located in a municipal building in the bazar, will be moved to the new building.

Churches.

The churches in the cantonment are St. Mary's Protestant Church, the Roman Catholic Church, and the Presbyterian Church, and in the town the Native Christian Church of St. Luke's and the Methodist Church. St. Mary's Church is one of the finest and largest Military churches in India. The chancel contains a window erected in memory of Sir Robert Sandeman, and a beautiful mosaic reredos to the memory of Sir James Browne. The church was built in 1889-92 at a total cost of Rs. 2,79,519.

The Roman Catholic Church was built in 1897, the Government of India contributing Rs. 95,000 towards its cost.

District courts.

The administrative block occupies a central position in the town, on the Sandeman road, and was built in 1891-92 at a cost of Rs. 1,97,379 including later additions. In these buildings are located the Treasury, all the District courts and offices and the municipal offices. In the same compound are the Baluchistán Volunteer Rifle Corps armoury room, and the treasury guard room, which cost Rs. 30,000.

Volunteer institute.

The Baluchistán Volunteer Rifle Corps possesses an institute built in 1905 at a cost of about Rs. 12,000.

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Residency.

The building of the first Residency was started in 1877 and additions were made to it from time to time. The old buildings were, however, pulled down and the present building was erected in 1892-93 at a cost of Rs. 1,25,480. It stands in a garden, covering about 42 acres. The dining room contains oil paintings of Lord Northbrooke, Sir Robert Sandeman (a replica of that in the Sandeman Memorial Hall), Sir Oliver St. John, Sir James Browne and Sir Hugh Barnes. Those of Sir Robert Sandeman and Sir Hugh Barnes are by Sir John Collier.

To the south of the Residency is the Darbár Hall completed in 1884 at a cost of Rs. 92,000. The main hall was used as a Church for some years before St. Mary's Church was built.

Browne gymkhána.

The Browne gymkhána, which is principally used by the native clerks employed in the Government offices, was established in 1894, the pavilion being provided by Khán Bahádur Burjorji D. Patél. The members pay a monthly subscription, and the affairs are managed by a committee which is elected annually.

Other buildings.

Among other Government buildings may be mentioned the arsenal in the fort, the telegraph office, the post office, and a large travellers' bungalow.

Markets.

The Ingle market, where vegetables and fruit are sold, is situated on the Bruce road; adjoining it is the meat market for the sale of meat, fish, and fowls. The cantonment also possesses a small market, but on account of the approaching completion of the Staff College and the increase in the cantonment which has already taken place, it is proposed shortly to build a large one in a central position.

Fairs and festivals.

An annual horse show and District fair is held at Quetta in the autmn, generally in September. Several well known shrines at which fairs are held, are situated in the town, the chief among them being the Pír Bukhári, the Shál Pírán and Páni Náth.

Shrine of Pír Bukhári.

The shrine of Pír Bukhári, lies within the municipal limits near the cantonment hospital. The saint after whom it is named was a Hajábzai Saiad of Pishín. From his retiring disposition he was also known as Khilwati. He performed certain miracles, on seeing which the Kási Afgháns adopted him as their patron saint and set aside half a *shabána* of land and water for the use of his shrine. The land has now been bought up and an annual cash payment has been substituted. A small fair is held at the shrine every Thursday, and two great fairs are held on the two *Ids*. On these occasions it is visited by Bráhuis, Afgháns and people from India, especially soldiers belonging to the local regiments. The offerings are at the disposal of the *mujáwar* in charge of the place. Dust from the shrine is believed to be a specific for venereal diseases. Near it lies the tomb of one of the daughters of the ex-Khán of Kalát, Mír Khudádád Khán, named Pírán Khátún, who, owing to a dream which she had, expressed a wish to be buried there.

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Shál Pirán.

The shrine of Shál Pirán, who was known in his life time as Khwája Nasír, a Saiad, lies within the cantonment limits between the fort and the Lytton road, but is of no great importance.

Páni Náth.

The shrine of Páni Náth, a Hindu Yogi, lies within the walls of the fort. Páni Náth is said to have been one of the disciples of Gurú Gorakh Náth, the well known ascetic of India, and after passing 40 years in the contemplation of God, was buried alive at the place where his shrine now stands. The Shálkoti, Sindi and other Hindus ascribe many miraculous and supernatural powers to him, and have permission to go to the fort every Monday for purposes of worship between 9 A.M. and 3 P.M. An annual Shiv Rátri fair has also been held at the place since 1892, when the Hindus of all sects assemble for worship. The shrine is a small domed building, to the north of which lies the tomb of another Yogi (Amar Náth) who was the keeper of the shrine of Páni Náth for many years. Between the two is a hut for the use of the *chélas* of both Yogis who have permanent passes of admission to the fort for the maintenance of the shrine. There are 12 families of Shálkoti Hindus in Quetta, (apparently descended from Quetta shop keepers who were here before the British occupation), who are responsible for finding one meal every day for the keepers of the shrine and also pay them a fixed sum called *badhán*. This is as follows :—

	Marriage.	Ceremony of sacred thread.	Ceremony of first shaving of head.	Birth of a son.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Páni Náth	6 6 0	0 10 0	0 5 0	0 5 0
Amar Náth	2 9 0	0 5 0	0 2 6	0 2 6

The *Pancháit* of Quetta has a charitable fund, out of the annual collections of which six pies per rupee are allotted to all the religious institutions in the town. Out of the total sum thus set aside, Páni Náth's shrine gets 2 annas 6 pies and Amar Náth's 1 anna in every rupee.

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APPENDIX I.

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
1. Aghér Pánrae	Gentiana Olivieri Griseb.	...	All hills	A drug for inducing perspiration. See also *bangéra*, No. 15 below.
2. Alu Bálu ..	Cerasus vulgaris or Cerasus cabroniana	Cherry, Sour (Dwarf cherry)	Quetta	......
3. Alu Bukhára	Prunus Bokhariensis	Plum, blue ...	Gardens	......
4. Alúcha ...	Prunus communis ...	Plum, yellow...	,, ...	......
5. Amrat ...	Pyrus communis ...	Common pear	,, ...	......
6. Anángah ...	Prunus cerasus ...	Common cherry	All hills	The wild cherry.
7. Anár ...	Punica granatum ...	Pomegranate ...	All gardens especially in Ináyat Ullah Káréz.	.. ...
8. Angúr ...	Vitis vinifera ...	Grape ...	All gardens especially in Quetta, Kiráni, Gulistán, Ináyat Ullah Káréz and Kamálzai.	The principal varieties are *haita*, *husaini*, *kalamak*, *lál*, *raocha*, *sáhibi*, *sheikh ali*, *spín kishmishi*, *sra kishmishi*, *tandán*, *tor*, *kuláh ghaochak*, *amíri*, *askri*, *khalíli*, *khálchíni*, and *fakhri*.

APPENDIX I.—(*contd.*).

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
9. Arghuch ...	Scorzonera (?) mollis, Bieb.	Scorzonera ...	All hills	Used as a famine food.
10. Arghunkae...	,, ,,	,, (Small variety)	,, ...	Root used as a vegetable.
11. Babrozae ...	......	...	,, ...	Fodder for cattle, sheep and goats.
12. Bádám ...	Prunus amygdalus (Amygdalus communis).	Almond ...	All gardens especially in Gulistán Káréz.	......
13. Bakáin (Punjábi).	Melia azidarach ...	Persian Lilac...	At Quetta and Pishín...	Scarce.
14. Bang ...	Hyoscyamus reticulatus, L.	Species of henbane.	Toba Achakzai ...	Poisonous plant; drug for tooth-ache.
15. Bangéra ...	Gentiana Olivieri ...	...	All hills	See *aghér pánrae*, No. 1 *supra*.
16. Barara ...	...	...	,, ...	Used for fuel.
17. Bartang ...	Plantago canceolata...	...	Along water channels...	Drug for cough among infants.

18. *Bihi* ...	*Cydonia vulgaris* ...	*Quince* ...	*In gardens, especially in Gulistán Káréz.*	......
19. Bushka ...	Lepidium draba, L ...	...	Wheat and barley fields	Used as a vegetable.
20. Busundak, Br.	Sophora alopecuroides	Wild bush ...	Quetta tahsíl	See *ghurézah*, No. 33 below.
21. Chinár ...	Platanus orientalis ..	Oriental plane (The plane tree)	Roadside tree in Quetta, Pishin and Chaman towns.	......
22. Chinjan Butae	Nepeta glomerulosa...	..	All hills	Fodder for sheep and goats, also used as fuel.
23. Chinjan Wulli	Echinops	...	Toba Achakzai	Drug for killing lice and worms.
24. Dangar Sélae	Cucumis	...	"	Roots used as a purgative. Juice of the green leaves used for making cheese.
25. Ganacha ...	Salvia spinosa Linn ...	...	All hills	Seed is used as a drug for tooth-ache and sore eyes.
26. Ganatai ...	Leontiae leontopodium.	...	Toba Achakzai	Roots used in lieu of soap.
27. Gandhér ...	Nerium odorum ...	Sweet scented oleander ...	Tang Masézai	Wild bush injurious to camels.
28. Gangu ...	Othonopsis intermedia, Boiss.	Wild bush ...	Hills in Quetta tahsil ...	Infusion of the leaves used for washing children in cases of fever. Twigs used as fuel. See also *mungli*, No. 67 below.

APPENDIX I.—(*contd.*).

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
29. Gázarra ...	......	Wild bush ...	Toba Achakzai	Fodder for cattle, sheep, goats and camels.
30. Gharwásha ...	Iris songarica, Schrenk.	...	Chaman and Pishín hills	A purgative and medicine for diarrhœa.
31. Ghaz ...	Tamarix orientalis ...	Tamarisk ...	In Toba Achakzai, Pishín, and Shorarúd	Used for fuel and making wattle.
32. Ghoelára ...	Alyssum heterotricleum.	...	Wild plant in wheat and barley fields.	Flowers eaten raw. See also *shamsháka*, No. 90 below.
33. Ghurézah ...	Sophora alopecuroides	Wild bush ...	Quetta Hills	Fuel: leaves used as manure for *pálézát*. See *busundak*, No. 20 *supra*.
34. Gowan ...	......	...	Toba Achakzai ...	Roots used as fodder for sheep, goats and camels in times of scarcity.
35. Gul Guláb ...	Rosa damascena ...	Rose, Persian	......	Rose water and scent manufactured in Quetta.
36. Hinja ...	Ferula fœtida ...	Asafœtida ...	Zarghún hills	Condiment and drug.
37. Injá-ora ...	Allium sphærocephalum.	Wild garlic ...	Found throughout the District.	Used as a vegetable.

38. Inzar ...	Ficus carica	Fig	In gardens, especially in Gulistán and Kila Abdulla.	......
39. Jámboi ...	Brassica campestris, Napus.	Wild mustard	Wild plant in wheat and barley fields.	Eaten raw and cooked, as a vegetable.
40. Jauz ...	Jauglans regia ...	Walnut ...	Gardens in Quetta ...	......
41. Káhkúti ...	Zizyphora clinopodioides, (z. tenuior, Linn).	...	Hills	Cooling drink prepared from the leaves.
42 Kalpora ...	Teucrium stocksianum, Boiss.	...	Wild plant found everywhere.	Drug for fever.
43. Kandabugh	......	...	Toba Achakzai	Famine food ; roots used in lieu of soap.
44. Kanganbútae	Diarthron vesiculosum.	...	"	Wild plant used for killing lice in the hair.
45. Kárgahtikai	......	...	All over the District ...	Fodder for cattle ; infusion is a cooling drink.
46. Karoskae ...	Berberis vulgaris ...	True barberry	Zarghún and Tóba hills	Roots boiled in water and used for tanning skins. Decoction also given to human beings and cattle in cases of internal injuries. See *zralg*, No. 134 below.
47. Khákshír ...	Sisymbrium sophia ...	...	All hills	Seeds used as cooling medicine mixed in *sharbat*.

APPENDIX I.—(*contd.*).

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
48. Khamérae ...	Scorzonera ramosissima, D. C.	...	Toba Achakzai	A wild plant eaten by Achakzais in times of scarcity.
49. Khanjak (Wanna).	Pistacia Cabulica ...	Pistachio nut tree.	In Khwája Amrán, Chiltan, Zarghún and Mashélakh hills.	Fruit much prized by the people. Excellent fuel. Two varieties are recognised, *bághi* and *na-bághi*.
50. Khátol ...	Tulipa stellata ...	Wild tulip ...	All hills	There are two varieties called *súrgul*, i.e. red tulip and *zhargul* i.e. the yellow tulip.
51. Kharorak ...	Arnebia, Sp.	...	All over the district ...	Fodder for sheep, goats, camels and donkeys. Also eaten raw by the poor.
52. Khulfa (Achakzais)	Portulaca oleracea ...	Indian purslane.	Toba	See *mirri*, No. 66 below.
53. Khwazha Walla.	Glycyrrhiza glabra ...	Liquorice ...	......	See *malkhuzi*, No. 59 below.
54. Kumála ...	...	Wild plant ...	Toba Achakzai ...	Fodder for sheep, goats and horses.
55. Léghúnae ...	Daphne oleoides, Schreb.	Poisonous wild bush.	......	......

56. Lúkha ...	*Typha angustifolia* ...	...	......	......
57. Mákhai ...	Astragalus	...	All hills	Flowers eaten raw: branches used as fuel.
58. Malangián ...	Zizyphora, Sp. ...	...	Wild plant in hills in Pishín and Chaman.	Seeds are a medicine for dysentery.
59. Malkhuzi ...	Glycyrrhiza glabra ...	Liquorice ...	Wild plant in ravines in Pishín and Chaman.	Drug for cough. See also *khwazha walla*, No. 53 *supra*.
60. Manra (Quetta).	Pyrus malus ...	Apple ...	In gardens	See also *séb*, No. 85 below.
61. Marwandi ...	Vites agnus ...	...	Chaman	A dyeing plant.
62. Mastang ...	Castus	...	Achakzai and Kákari Toba.	Roots used as famine food, fodder for sheep, goats and camels.
63. Matsotsak ...	Orobanche Indica, Ham.	Mustard parasite.	......	Parasitic plant injurious to melons.
64. Maurai ...	Zizyphora clinopodioides, M. Bieb.	...	Toba and Pishín hills ...	Used as drug for typhus fever.
65. Mézhaghzai	Eryngium carlinoides, Boiss.	...	......	......
66. Mirri ...	Portulaca oleracea ...	The common Indian parslane.	Wheat and barley fields and also cultivated.	See also *khulfa*, No. 52 *supra*. Used as vegetable.

APPENDIX I.—(*contd.*).

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
67. Mungli (Br.)	Othonopsis intermedia, Boiss.	Wild bush ...	Hills in Quetta tahsíl ...	See *gangu*, No. 28 *supra*.
68. Murgha (Chaman).	Poa bulbosa, Linn ...	Common fodder	Throughout district ...	Fodder for sheep, horses, goats and cattle.
69. Naghuncha...	Crataegus oxyacantha.	Hawthorn ...	Quetta and Hanna ...	......
70. Naghura ...	......	...	Wild plant in hills ...	Roots used as a famine food.
71. Nána ...	Mentha viridis ...	Mint	Near water channels ...	Condiment and drug.
72. Pada ...	Populus Euphratica.	Euphrates poplar.	Quetta and Pishín ...	Roadside tree.
73. Pápúka ...	......	...	Wild plant in wheat and barley fields in Quetta.	Roots eaten by the poor.
74. Parkae ...	......	...	Pishín and Shorarúd ...	Used for making crude potash.
75. Patrae ...	Herniaria hirsuta, L.	...	Everywhere	Fodder for cattle, camels, etc.
76. Péohak ...	Cuscuta	...	......	......

77. Pérwatti ...	......	...	Everywhere	Fodder for sheep, goats, cattle etc.
78. Potsakai ...	Euphorbia caeladenia, Boiss.	...	Toba hills	Juice used for making cheese.
79. Pukka tátúka	......	...	"	Roots used as a famine food.
80. Pushai. (Rawásh Persian).	Rheum emodi ...	Rhubarb ...	Khwája Amrán range, Rod Malézai and Barshor.	The plant is eaten by the people and considered cooling.
81. Raghbolae ...	Peucedanum Sp. ...	...	All hills	Famine food.
82. Sába ...	......	...	"	Grass.
83. Samballa ...	Euenus stellata, Boiss	...	Wild plant in hills ...	......
84. Sargarai ...	......	...	Grass found in all hills.	Fodder for horses, cattle, sheep and goats.
85. Séb	Pyrus malus ...	Apple ...	......	See *manra*, No. 60 *supra*.
86. Séji	Eremurus aurantiacus, Baker.	...	Wild plant in hills ...	Cooked as a vegetable.
87. Shaftal ...	Trifolium repens ...	Clover ...	Grows in Pishín and Quetta.	......
88. Shaftálu ...	Prunus Persica ...	Peach ...	All gardens	Especially Ináyat-ullah Káréz.
89. Shalíl ...	Amygdalus Persica ...	Nectarine ...	......	......

APPENDIX I.—(*contd.*).

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
90. Shamsháka...	......	...	Wild plant in wheat and barley fields.	See *ghoeldra*, No. 32 *supra*.
91. Shang ...	Fraxinus xanthoxyloides.	Ash	All hills	......
92. Shátara ...	Fumuria parviflora ...	...	Wheat and barley fields.	Drug for purifying blood.
93. Shariwi ...	......	...	Tree found in Toba and Pishín hills.	......
94. Shawi ...	Koelpinia linearis, Pall.	...	Grass in all hills ...	A famine food.
95. Shinshobae...	Mentha Sylvestris ...	Peppermint ...	......	Fodder for sheep, goats, donkeys and camels.
96. Shkrae ...	......	...	Grass found in hills in Pishín and Chaman.	Fodder for cattle, sheep, horses, goats etc.
97. Shorae ...	Haloxylon Griffithii, Bunge.	Barilla plant ...	......	......

98. Sinjid ...	Elaeagnus hortensis...	Trebizond date or Bohemian olive.	Fruit tree in Pishín and Toba.	Fruit eaten dry, good timber.
99. Spánda. P. Kasán Kur Br.	Peganum harmala ...	Garden Rue ...	Everywhere	Seed used as a drug.
100. Spédár ...	(1) Populus alba ...	The *alb* or white poplar.	Quetta, Pishín and Chaman.	......
	(2) Populus Nigra ...	Black or Lombardy poplar.	Quetta town and cantonment.	......
101. Spérawan ...	......	...	Tree found in Toba hills.	Fuel.
102. Spéshta ...	Medicago sativa ...	Lucerne or purple lucerne.	......	Green fodder.
103. Spínamaurai.	Thymus	...	......	......
104. Sra Tirkha...	A variety of Artemisia.	...	......	Drug for fever. Also used as fuel.
105. Staghnár ...	......	...	A species of asafœtida occurring in hills.	......
106. Sundrézhae...	......	...	All hills	Fodder for sheep, goats and cattle etc. Green leaves eaten by the people.
107. Surghashae...	Saccharum ciliare ...	...	A kind of grass found in hills.	Fodder for cattle, sheep etc.

APPENDIX I.—(*contd.*).

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
108. Súrgul ...	......	...	Shorarúd	Bush from which crude potash is made.
109. Súr Gul (Gul-i-Lala.)	Tulipa stellata ...	...	......	Red tulip. See *khátol*, No. 50 *supra*.
110. Sursánda ...	Hymenocrater sessilifolius, Benth.	...	......	Cooling infusion is made from leaves for children suffering from fever.
111. Tála	......	Common grass.	Toba Achakzai and Chaman Sahara.	Fodder for sheep, goats, horses and cattle.
112. Tátúka ...	Scorzonera, (Sp.) ...	...	Pishín and Chaman hills.	Roots eaten by poor classes.
113. Tirkha ...	Artemisia ...	...	A wild bush found all over the district.	Fodder for sheep, goats and donkeys, also used as fuel.
114. Toralu ...	......	...	......	Variety of black plum.
115. Tor sag ...	......	...	Wild plant in wheat and barley fields.	Used as vegetable.
116. Tút	Morus	Mulberry ...	......	The principal varieties are *bor*, *khar tút*, *tor*, *bédána*, *kishmishi*, *paiwandi*, and *shuri*.

117. Ubashta ...	*Juniperus excelsa* ...	Juniper ...	Chinár hills in Toba, Toba Kákari, Chiltan, Zarghún, Takatu and Súrgund hills.	Timber and fuel.
118. Umán ...	Ephedra pachyclada	...	Wild bush found in hills.	The twigs are used for tanning *mashk* leather; also as fuel. Ashes mixed with tobacco for chewing.
119. Ushu nár ...	Ferula Oopada, Boiss.	...	All hills	Variety of Asafœtida, eaten like *staghnár*.
120. Wahúnár ...	......	...	"	The upper skins of the stalks are burnt in hot ashes and eaten by the Achakzais.
121. Wahwásha ...	......	...	Grass found in Toba and Pishín hills.	Fodder for sheep and goats.
122. Wanakka ...	......	...	All hills	Fodder for sheep, goats and cattle.
123. Washti ...	Stipa pennata, Linn...	...	Achakzai and Kákari Toba.	Fodder for cattle, sheep, goats and horses.
124. Wízha ...	......	...	All hills	Grass.
125. Wulla ...	Salix	Willow ...	......	Timber and fuel. The principal varieties are *béd mushk* (scented willow), Kábuli, Kandahári, *majlún* or weeping willow and *sara* or red willow.
126. Yárílang ...	Onosma echioides, L.	...	Pishín	......

APPENDIX I.—(*contd.*).

ALPHABETICAL LIST OF THE COMMONER TREES AND PLANTS OF THE QUETTA-PISHIN DISTRICT.

Pashtú name.	Scientific name.	English name.	Locality where found.	Brief remarks as to local uses.
127. Zardálu ...	Prunus Armeniaca ..	Apricot ...	Common everywhere ...	......
128. Zawal ...	Achillea Santolina, Stocks.	Common grass	Throughout District ...	Flowers form a cooling drink for children. Fodder for sheep and goats.
129. Zíra ...	Cuminum cyminum...	Cumin ...	Zarghún and Kand hills.	Condiment.
130. Zirga ...	Prunus eburnea ...	Small wild almond	Common everywhere ...	Fruit is eaten; gum also used.
131. Zmai ...	......	......	Pishín, Shorarúd and Quetta.	Used for making crude potash.
132. Zoz ...	Alhagi camelorum ...	Camel thorn ...	......	Fodder for camels.
133. Zral. (Shingulai).	Cichorium intybus ...	The wild or Indian Endive.	......	Punjábi *káshni*. The roots are soaked in water in the night and the infusion is drunk in the morning in cases of fever.
134. Zralg ...	Berberis vulgaris ...	True Barberry	Zarghún and Toba hills.	See *karóskae*, No. 46 *supra*.
135. Zúfa (Zúpa)	Hyssopus officinalis...	Hyssop ...	Achakzai and Kákari Toba.	......
136. Zunkai ...	......	...	Wild plant occurring in wheat and barley fields	Fodder for sheep, goats and cattle, also eaten raw by the people.

APPENDIX II.

Note on Ornithology in the vicinity of Quetta, by Captain T. Marshall, R.A.

These notes refer to the hill portion of Baluchistán, chiefly in the vicinity of Quetta. I propose to take the different species in the order they come in the "Fauna of British India" series, and before coming to details would like to make a few general remarks. The actual resident birds of this tract of country are not many, but a good many species pass through on migration from the plains to central Asia, and vice versa; some of these remain here to breed in the summer, and some only come here in winter. As far as I know there are no birds peculiar to this District.

Family Corvidæ.—The first family we come to is that of the Corvidæ or crows. This is fairly represented; what is lacking in numbers of different species is fully made up for by the number of individuals of one particular species, i.e., (1) *Corvus corax*, the Raven. This bird quite takes the place of the common Indian crow, taking a delight in sitting on the top of the chimney in the hot weather, and cawing down it; if that does not wake you, he proceeds to pull a few of the bricks off the chimney and drop them on the tin roof: this is usually most effectual. Breeds in the hills about February to March. (2) *Corvus frugilegus*, the Rook. A few come round the fields in winter, but they are scarce. (3) The common Magpie, *Pica rustica*, is very common at Ziárat, and in the cold weather can often be seen on the hills near Quetta: breeds at Ziárat.

Both the Indian Choughs visit these parts. (4) The red-billed Chough, *Graculus eremita*, being very common in the cold weather, feeding in flocks in the ploughed fields, and returning to the high hills in summer. (5) The yellow-billed Chough, *Pyrrho-corax alpinus*. This bird I am not quite sure about; I think I saw some at about 11,000 feet near Quetta in May, and the natives certainly say there are two kinds, one with a big red bill, and the other with a short white one.

Coming to Tits, the only common one near Quetta is (6) *Parus atriceps*. The Indian Grey Tit, seen chiefly in the cold weather. Some few (7) Red-headed Tits, *Aegithaliscus erythrocephalus*, are to be seen at Ziárat in May. The only other one is (8) the Simla Black Tit, *Lophophanes rufinuchalis*, which is common in Ziárat in May, and also in the better wooded hills in the vicinity of Quetta: this bird almost certainly breeds here.

Family Crateropodiæ.—These are chiefly birds of the plains, and are not represented much in this District. (9) *Trochalopterum lineatum*, the Himalayan streaked laughing Thrush. This bird is common at Torkhán near Harnai in February. I also have seen it in the hills near Quetta. (10) *Myiophoneus temmincki*, the Himalayan whistling Thrush. This handsome bird is not common, but may often be met with in the hills, frequenting some rocky stream; its bright yellow bill and blue plumage render it very conspicuous.

Of bulbuls the only one at all common is (11) the white-eared Bulbul, *Molpastes leucotis*. This bird arrives in the spring, but is nowhere really common, and I do not think stays to breed. There is also one species of red-vented bulbul which is probably the Punjáb variety, *Molpastes intermedius*, but this I have only heard of, and never seen.

Family Sittidæ.—The only representative of this family is (12) *Sitta tephronota*, the eastern rock Nuthatch. It is a most interesting little bird.

It is very common in the hills, and very noisy if any one approaches its haunts, and has a curious habit of raising himself up and down on his legs as if he was going through some gymnastic exercise. Its general colouring is pale blue. Its nest is, however, the most interesting part about it, for it is usually placed on the face of a rock, a hole being selected, which is filled with agglutinated mud. This is then brought out in the form of a cone, 8 inches or more in length, through which is the entrance to the nest The inside is lined, chiefly with camel's hair, and the outside decorated with feathers. The nest, when built, is almost as solid and hard as mortar.

Family Dicruridæ.—(13). The familiar King Crow, *Dicrurus ater*, is common enough at Harnai, but does not get up much higher.

Family Certhiidæ.—Of the Creepers, the only representative is (14) the wall Creeper, *Tichodroma muraria*. This is not common, but I have seen it at Quetta in the winter. It is a beautiful little bird with its crimson wing spots, and curious habit of climbing up perpendicular rocks in search of food.

Family Silviidæ.—The Warblers again are a family that do not greatly affect Quetta; only one species, as far as I know, breeding here. That is (15) *Hypolais rama*, Sykes' tree Warbler. This minute little bird arrives in spring and breeds about May in any low bush usually near water. The male has a pretty little song. (16) *Sylvia jerdoni*, the eastern Orphean Warbler, is not uncommon in the hills on migration, and can be readily recognised by his black cap. (17) *Sylvia althæa*, Hume's lesser white throated Warbler, I identified at Ziarat as common in May, but I may be wrong. The bird, whatever it was, had a very sweet song of the usual white throat order. (18) *Sylvia minuscula*, the small white throated Warbler, is common on migration. (19) *Phylloscopus tristis*, the brown willow Warbler. These little warblers are very hard to identify, but I think I got this one right. It is fairly common, feeding in the trees in small flocks in winter.

Family Laniidæ.—The Shrikes are fairly well represented in summer; none in winter here. The true shrikes are a very well marked group; their colours are usually grey, chestnut, black, white, and they have a very strong notched bill; they live almost entirely on insects, although the larger ones will occasionally seize and kill a young bird. They all have a harsh call note, sometimes often repeated. (20) *Lanius lahtora*, the Indian grey Shrike. I have only seen two near Quetta in April. (21) *Lanius vittatus*, the bay-backed Shrike. This little shrike with (22) *Lanius erythronotus*, the rufous-backed Shrike, are the two commonest in Quetta, coming in in the spring, and remaining to breed. The latter one is particularly in evidence; hardly a garden in Quetta but has at least a pair breeding in it. A favourite habit of the bird is to sit on some post or bare bough, from which there is a good view all round, ready to pounce on any unfortunate grass hopper or the like, that moves within its range of vision. (23) *Lanius isabellinus*, the pale-brown Shrike. This is common in the District in spring, but avoids houses. It breeds freely some years near Quetta. (24) *Lanius cristatus*, the brown Shrike. I once saw one close to Quetta, in April.

Family Oriolidæ.—There is one species of yellow oriole which visits Quetta in the summer, probably (25) *Oriolus kundoo*, the Indian Oriole. Its easily remembered note may often be heard in the fine trees in the Residency garden at Quetta.

Family Sturnidæ.—Starlings and Mynahs are poorly represented. (26) *Pastor roseus*, the rose coloured Pastor. This handsome bird usually makes his appearance about May when the mulberries are ripe, of which it consumes a great deal. (27) *Sturnus menzbieri*, the common Indian Starling. Only stragglers of this species seem to reach Quetta. I have seen small flocks occasionally in the winter. The same remarks

apply to that well known bird (28) the common Myna, *Acridotheres tristis.*

Family Muscicapidæ.—Flycatchers again are all migratory, only passing through Quetta on their annual moves. (29) *Muscicapa grisola*, the spotted Flycatcher. This well known English bird arrives very early in January or February and stays till late, in fact I have seen them up to June. (30) *Siphia parva*, the European red breasted Flycatcher. Common in spring; may be seen in any garden at that season catching flies with the utmost assiduity. (31) *Terpsiphone paradisi*, the Indian paradise Flycatcher. This very handsome bird occasionally visits Quetta in the summer, but not, I think, often. The male has two very long tail feathers, which produce a most curious effect when he is flying. Curiously enough, when fully adult, that is, about 4 years old, he loses these feathers, the general colour of his plumage at the same time turning from chestnut to white.

Family Turdidæ.—This family, especially in the sub-family of Chats, is pretty well represented. The chats feed on insects, usually capturing them on the ground, and like nice open country with stones, and not too many trees. They are well suited, therefore, round Quetta. (32) *Pratincola caprata*, the common pied Bush-Chat. Very common in summer and breeds here. I think every one must have noticed this little fellow, looking all black with a white wing spot, and has a very sweet short song. Breeds in a hole in a bank, in much the same positions as the English robin. (33) *Pratincola maura*, the Indian Bush-Chat. Common on migration up to May. A pretty little bird, very conspicuous with his black head, white collar, and red breast.

We now come to the true *Saxicola*. These are the birds of the stony plains, and are usually black and white abelline. (34) *Saxicola picata*, the pied Chat. Arrives in spring and breeds all over the hills, usually choosing a hole in a rock for his nest, often under a large stone on the ground. He has sometimes a curious habit of building his nest on a foundation of small pebbles, especially if the hole selected is rather a large one. His plumage is simply black and white, as his name implies; the male sings well in the breeding season. (35). *Saxicola Barnesi*, Barnes' Chat. Common in the bare hills in the cold weather; does not breed as far as I know. (36) *Saxicola Isabellina*, the Isabelline Chat. Comes early and breeds about the end of March. This is a common bird about the country, and can be easily recognised by its generally sandy colour, with a white tail, and black tip which shows up clearly when the bird flies. It breeds deep down in old rat holes, sometimes 4 feet in or more. (37) *Saxicola deserti*. The desert Chat. This bird is not uncommon in the spring, but I do not think it breeds.

The next sub-family is that of the Redstarts; three of these frequent Quetta at different times of the year. (38) *Ruticilla erythronota*, Eversmann's Redstart. Pretty common in the cold weather. (39) *Ruticilla rufiventris*, the Indian Redstart. This little bird is common in the cold weather and needs little description, his brilliant chestnut tail which, by the way, he is continually shaking and showing off, at once proclaims him to be a redstart. This bird breeds high up on the hills near Quetta, and I have found the nest. (40) *Cyanecula suecica*, the Indian Bluethroat. On migration is common; but as it is of rather a retiring disposition it may easily be missed. (41) *Merula atrigularis*, the black throated Ouzel. This bird usually goes by the name of thrush in Quetta, and is well known. It is very common in some winters but rarer in others; it feeds on the ground very like a blackbird or thrush at home, and has a regular blackbird's chuckle when alarmed.

Of the Rock Thrushes, (42) *Petrophila cyanus*, the western blue Rock-Thrush, is the bird of these parts. This bird is not uncommon in the hills in spring, and breeds. It has a very sweet song, which sounds to

very great advantage up in the hills in some rocky gorge away from all habitations. The nest is usually placed on a ledge in a cave and is a large and massive structure. (43) *Monticola saxatilis*, the Rock-Thrush. I have only seen two, probably stragglers migrating in spring. More common in autumn. (44) *Turdus viscivorus*, the Missel-thrush. This fine fellow is common in the higher hills in winter, and remains there at least up to May, so that it probably breeds. Its loud hoarse call-note can frequently be heard at that time; it does not come down to Quetta. (45) *Tharrhaleus atrigularis*, the black throated Accentor. This is the last of this large family. I have only seen one small flock feeding in one of the spinnies near Quetta in December.

Family Fringillidæ.—This comprises Finches, Buntings, Grosbeaks, and is, on the whole, well represented. To begin with the Grosbeaks: (46) *Pycnorhamphus carneipes*, the white-winged Grosbeak. This is common at Ziárat in spring, and in the hills round Quetta in the cold weather; it feeds in flocks on the juniper berries; the family can always be recognised by the large size of the beak. (47) *Coccothraustes Humii*, Hume's Hawfinch. This little finch is common round Quetta in the cold weather and spring; some few breed. It is a common cage bird, and has a nice little song. Its general colour is sandy pink, with black round the bill.

Of Rose-Finches, there are two species. (48) *Propasser grandis*, the red-mantled Rose-Finch. This is common in spring at Ziarát, but I have not seen it elsewhere. (49) *Carpodacus erythrinus*, the common Rose-Finch. Not at all rare in certain places in the hills in spring, but breeds higher up; common at Ziárat in May. As their name implies, these birds, at least the males, are of very handsome bright red plumage. (50) *Carduelis caniceps*, the Himalayan Goldfinch. This closely resembles the well known European bird. Never common near Quetta, but often seen in the cold weather and spring right on to June. (51) *Metoponia pusilla*, the gold-fronted Finch. To be seen in flocks in the cold weather and spring in the hills. This handsome bird is one of the smallest of the finch tribe, and can easily be recognised by its crimson crown. (52) *Passer domesticus*, the house Sparrow. Our old friend is the same here as elsewhere, noisy, destructive and cheeky to a degree; he causes a great amount of loss both to fruit growers and all cultivators. He only remains in Quetta in the summer, moving off directly it gets cold. (53) *Passer montanus*, the tree Sparrow. Much preferable to the last named; this is the resident sparrow of Quetta, staying the whole year. Both sexes are alike.

We next come to Buntings, of which there is a fair variety. (54) *Emberiza leucocephala*, the pine Bunting. This visits us in large flocks in the cold weather, feeding in the open fields, where it is a good deal harried by the Sparrow hawk. (55) *Emberiza Stewarti*, the white-capped-Bunting. This striking little bird, with his white cap and broad rufous band on his breast, is common in the hills in summer; he does not frequent the plains. (56) *Emberiza Buchanani*, the grey necked Bunting. Seen on migration in April and May. This bird is of plain plumage, and feeds on the ground, so I do not expect it is much noticed. I have seen it in the fields all round Quetta. (57) *Emberiza luteola*, the red-headed Bunting. The only place I have seen this bunting was Kahán on the way to Ziárat. If seen, it can generally be easily recognised, the general tint of its plumage being bright yellow turning to dark red on the head. (58) *Emberiza striolata*, the striolated Bunting. This is the last of the Quetta buntings. Some years it is very common in the hills in summer; probably breeds, as I have heard it singing in June. It is smaller than the majority of the genus, and has a curious black and white head.

Family Hirundinidæ.—This family comprises the Swallows and Martins. They are summer visitors, with perhaps the exception of

the Crag Martin. (59) *Hirundo rustica*, the Swallow. This familiar bird arrives in Quetta towards the end of February: it is extremely common during the summer and breeds freely.* (60) *Chelidon urbica*, the Martin. I have seen this bird in the hills in May, and shot one for identification. It is, however, by no means common. The genus Crag Martin is represented by one species, (61) *Ptyonoprogne rupestris*, the Crag Martin. This bird is generally distributed all over the hills, wherever there are rocks: I have seen it as late as December, so probably it is resident all the winter. It makes a saucer shaped nest of mud against a face of rock, often on the overhanging roof of a cave and generally inaccessible. The bird can easily be recognised, being of a smoky brown colour with white spots on the tail. (62) *Hirundo Smithii*, the wire tailed swallow. This bird is easily recognised by the great length of his outer tail feathers, which are about 7 inches long. The only place I have seen it was at Harnai, where it was breeding in June; the nest was placed against the perpendicular side of a large rock, and was a very shallow saucer of mud, close to a stream. (63) *Hirundo nepalensis*, Hodgson's striated Swallow. This is a common bird in the hills, and may often be seen hawking for flies with the ordinary swallow. I have found one nest in a culvert under the railway.

Family Motacillidæ.—The Wagtail family is migratory at Quetta; only one species, as far as I know, remaining over the winter; the remainder only appear on migration. (64) *Motacilla alba*, the white Wagtail. This bird is very common in winter and spring, but leaves in the hot weather. It is much the same to look at as the pied wagtail at home. The remaining species are only to be seen about April and May, when most of them are by no means rare. They probably appear on the return migration. They are (65) *Motacilla melanope*, the gray Wagtail. This species is rare. (66) *Motacilla borealis*, the gray headed Wagtail. This species is also rare. (67) *Motacilla feldeggi*, the black headed Wagtail. Is common. (68) *Motacilla citreola*, the yellow headed Wagtail. Not uncommon. All these latter are species of yellow wagtails, and not at all easy to differentiate.

Closely allied to the wagtails come the Pipits, of which there are a fair variety in the Quetta district. (69) *Anthus trivialis*, the Tree Pipit. This is the bird familiar to English writers. Numerous flocks visit the country round Quetta in the cold weather. (70) *Anthus similis*, the brown Rock Pipit. This is one of the largest of the genus, and can always be recognised near Quetta by its size. Arrives about March, stays the summer and nests in the hills. (71) *Anthus campestris*, the tawny Pipit. This, like the Tree Pipit, visits us in the cold weather.

Family Alaudidæ.—This comprises the true Larks. These birds resemble the pipits in general, being of the same style of coloration, etc. (72) *Alauda arvensis*, the Skylark. This well known friend is very common round Quetta; in winter every field is full of them; in summer, though not quite so common, many stay to breed, and can be heard singing any day in spring. (73) *Calandrella brachydactyla*, the short-toed Lark. Common in the cold weather; very probably some stay to breed as I have seen them up to May. (74) *Galerita cristata*, the crested Lark. This is probably the commonest bird in the vicinity of Quetta: in every field and alongside every road it is always to be seen, summer and winter. (75) *Ammomanes phoenicuroides*, the desert Finch-lark. This bird seems to be most numerous in September in the low hills. I have not

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* It is called Kir kishí in Bráhui and Dehwári, and is looked on as the fore-runner of spring.

"Cat-footed swallow, come, sit on my door:
Give me a piece of mutton fat, for my feet are cracked," says the Bráhui verse.—Ed.

noticed it in summer at all, and not often in winter. It has a note very like a sisi, for which I have often mistaken it.

Family Picidæ.—I have only observed one species of woodpecker near Quetta, namely (76) *Dendrocopus sindianus*, the pied Sind Woodpecker. This bird was common at Shélabágh in May. (77) *Iynx torquilla*, the common Wryneck. This is occasionally seen about Quetta on migration in April.

Family Coraciadæ.—This comprises the Rollers, or Blue Jays as they are often called. (78) *Coracias garrula*, the European Roller. This bird is common in May, disappearing almost entirely by the end of June. I do not know where it breeds.

Family Meropidæ.—The Bee-eaters are represented by one species: (79) *Merops apiaster*, the European Bee-eater. This bird arrives about May and although it stays late, (some right through the hot weather), yet it does not seem to breed here. This handsome bird can always be recognised by its conspicuous plumage and fine rolling note; the colours comprise bright yellow throat, golden bronze back, emerald green breast and belly.

Family Alcedinidæ.—King-fishers are represented by one species: (80) *Alcedo ispida*, the common King-fisher. It is not common in Quetta, and is more numerous in spring than at other times, disappearing in summer, though a few remain through the winter.

Family Upupidæ.—Of the two species of Hoopoe, the European one, (81) *Upupa epops* is the one that visits Quetta. Arrives in April, and breeds generally in some hole in an old tree, or even in the rocks.

Family Cypselidæ.—The Swifts are well represented: of course all are summer visitors. (82) *Cypselus melba*, the Alpine Swift. This fine swift is not uncommon, especially in the hills. I have seen it as late as June. Can always be recognised in the air by its large size and white belly. (83) *Cypselus apus*, the European Swift. This, in the spring, is the commonest swift in Quetta; huge flocks of them can always be seen. They move on as it gets hotter. I once found 3 nests in the roof of a cave in June. (84) *Cypselus affinis*, the common Indian Swift. Sometimes a fair number, but not exactly common. Some few breed, as I have found their nests in the hills in May. This bird can always be distinguished from the last named, when flying, by a broad white band across the rump.

Family Caprimulgidæ.—The Nightjars are represented by (85) the European Nightjar, *Caprimulgus Europaeus*, pretty common in the hot weather.

Family Cuculidæ.—Here again we have an old friend in (86) *Cuculus canorus*, the European Cuckoo. This bird, as in England, comes in spring in large numbers, and then I suppose moves up to the higher hills. I have seen as many as 15 in a drive of about 2 miles.

Family Asionidæ.—I have only observed two species of owls near Quetta. (87) *Bubo ignavus*, the great horned Owl, or Eagle Owl. In the spring this bird is not uncommon in the hills. It can always be recognised by its size, except perhaps from *Bubo bengalensis*, the Rock horned Owl. Both of them run to about 2 feet long. (88) *Athene bactriana*, Hutton's owlet. This curious little owl is quite common about Quetta, and is, I think, a resident. I have seen it in July, and also in December.

We now come to the birds of prey, and I should like to say that in this department my identifications are not as complete as I would wish.

Family Vulturidæ.—The true vultures are represented by two species: (89) *Vultur monachus*, the cinereous Vulture. This fine vulture is by no means uncommon; it may breed in the hills but I am not sure. It appears black all over. (90) *Gyps fulvus*, the Griffon Vulture. This is the common vulture of the District and breeds in the

hills. (91) *Neophron percnopterus*, the Egyptian Vulture. This ugly, but extremely useful member of society, arrives in Quetta about April. Some breed in the hills. It is very common in the hot weather. (92) *Gypaetus barbatus*, the Lammergeyer. Very common round Quetta. In the cold weather can always be seen flying over cantonments or picking up rubbish, bones etc. in company with ravens and kites. It can always be recognised in the air by its great size, pointed wings, and wedge shaped tail. It breeds on precipitous cliffs in the hills, making a huge nest of sticks, generally in some cave in the cliff face.

We next come to eagles, and of these I am not sure. I have seen, however, (93) the golden Eagle, *Aquila chrysaetus*, in the hills and had an egg brought me. (94) *Hieraetus fasciatus*, Bonelli's Eagle, is by no means rare, and breeds in the hills. Out chikor shooting more than once this eagle has carried off a wounded bird from under my nose. It is a very fine sight to see one swoop out of the sky after a chikor that is lagging a bit behind the covey. This is a fine strong bird. I have seen one carry off with ease a red crested pochard which I had shot. (95) *Milvus govinda*, the pariah Kite. This is the ordinary kite of India. It is very common in the cold weather and spring, but appears to get rather scarce in the hot weather, though it never entirely disappears. (96) *Milvus migrans*, the black Kite. This, I think, is the kite of the hills and breeds freely on the cliffs. It does not frequent cantonments, so far as I know, and is a more solitary bird than the last. Of the harriers, there are a good many species that visit Quetta, only, however, on migration. (97) *Circus cyaneus*, the Hen Harrier. Some of these may be Pale Harriers, but I think most are Hen Harriers. The only ones I have shot belonged to this species. This bird is common in the cold weather, especially on migration. In April outside Quetta, 50 may be seen in an afternoon, quartering over the open fields. (98) *Circus aeruginosus*, the Marsh-Harrier. To be seen in suitable places in the cold weather; not by any means common. (99) *Buteo ferox*, the long-legged Buzzard. This is a common bird in the cold weather: its great variations of plumage make it difficult to identify. It can, however, usually be recognised as a buzzard by its heavy flight. (100) *Accipiter nisus*, the Sparrow-hawk. This is the English bird, and is by no means uncommon in the cold weather. The Gymkhana at Quetta is one of its favourite hunting places. Of the true falcons, the only one I have actually made sure of is (101) *Falco jugger*, the Laggar Falcon. This bird is common in the hills in the cold weather and catches a good many chikor, I should imagine. (102) *Tinnunculus alaudarius*, the Kestrel. Very common and resident; breeds in the hills.

Family Columbidæ.—This comprises the pigeons and doves, of which there are 4 species, 2 of each genus, in this District. (103) *Columba livia*, the blue rock Pigeon. This is the blue rock of Europe; is very common, resident, and breeds. In the autumn, after the crop is sown, very large flocks collect in the fields. One of the favourite nesting places of this bird is down the *kárézes*, or under-ground water channels. (104) *Palumbus casiotis*, the eastern Wood-pigeon. This bird is very common at Ziárat, breeds, and probably stays the cold weather. It is by no means uncommon also in the hills nearer Quetta. It much resembles the common wood pigeon of Europe. (105) *Turtur cambayensis*, the little brown Dove. This is the smaller of the two doves seen about Quetta; it is also commoner, and certainly some stay the winter. It breeds about April and May freely, at which time its soft musical "coo" can be heard anywhere where there are trees. (106) *Turtur risorius*, the Indian Ring-dove. This is a larger bird than the last, and only visits Quetta in the spring. Breeds freely in certain localities, but is not so generally met with. Its note is quite different from that of the last bird, being very deep and not so often repeated.

Family Pteroclidæ.—The sand-grouse family brings in the game birds. These, on the whole, are not plentiful as regards different species, but individuals occur in very large numbers. Sand-grouse pass through here on migration in very large flocks; probably there are more species than I know of. The only two species I actually have seen are (106) *Pterocles arenarius*, the black bellied Sand-grouse, which passes through in enormous flocks in September and October, and (107) *Pteroclurus exustus*, the common Sand-grouse. This passes through also, but I have seen more of the first named than any other species in this District.

Family Phasianidæ.—One species of quail that I am certain of is (108) *Coturnix communis*, the common or grey Quail. This is never common near Quetta, stragglers only arriving here in the spring. There is another species of quail in the hills, probably some kind of bush quail, but I have never shot one, though I have seen them occasionally. The next bird we come to is the mainstay of *shikár* near Quetta, namely (109) *Caccabis chucar*, the Chikor. This bird is very plentiful in all the hills round Quetta, breeds plentifully in good seasons, and, in spite of the fact that it is shot by Patháns over water more or less all the year, and in large numbers by Europeans in the shooting season, yet, given a good breeding season, appears as plentiful as ever. It may be mentioned as a curious fact about this bird, which was noticed in 1902 after a very dry winter, that the chikor never paired at all, but kept in packs right through the summer. This appears to be a provision of nature as, owing to the want of rain, there were practically no grass or flower seeds in the hills on which these birds largely feed; so that, if any young ones had been hatched out, it would have been more or less impossible for them to have kept themselves alive. The old birds managed to get along by digging up roots etc., large spaces on the hills being burrowed into, 4 to 6 inches deep, by them in their endeavours to find food. I thought at first that these places must be caused by rats, till I watched and saw the chikor at work. (110) *Ammoperdix bonhami*, the Sisi. Very common also, frequents lower ground than the chikor, and is not in such large numbers. (111) *Francolinus vulgaris*, the black Partridge. I have seen and shot these birds at Bábar Kach, and I believe they are plentiful near Sibi.

Family Rallidæ.—(112) *Fulica atra*, the Coot. Very common in any open water of any extent in the winter. Khushdil Khán near Pishín is full of them.

Family Otididæ.—(113) *Haubara Macqueeni*, the Haubara. This bird is not uncommon near Quetta on migration. March seems the usual month for them.

Family Glareolidæ.—(114) *Cursorius gallicus*, the cream coloured Courser. A few small flocks, on migration in September, is all I have seen of this bird.

Family Charadriidæ.—This comprises the plovers, and is by no means well represented near Quetta. (115) *Vanellus vulgaris*, the Lapwing or Peewit. This, the familar peewit of England, is a rare winter visitor. I have never seen more than a few together, more frequently only one. (116) *Aegialitis dubia*, the little ringed Plover. This fellow is common in spring, in all the fields round Quetta; some stay late, even up to June, but I do not think they breed. (117) *Limosa belgica*, the black-tailed Godwit. I shot one of these birds in March at Bábar Kach, and that is the only one I have seen. (118) *Totanus hypoleucus*, the common Sandpiper. (119) *Totanus glareola*, the wood Sandpiper. (120) *Totanus ochropus*, the green Sandpiper. These three sandpipers or snippets, as they are commonly called, are fairly numerous round Quetta on migration in spring. Some, especially green sandpipers, stay during the cold weather. I think they all leave before the middle of June. (121) *Pavoncella pugnax*, the Ruff. I shot one female near Khushdil

Khán in December. I never saw any more. (122) *Scolopax rusticula*, the Woodcock. Is not common, but every year some are seen and shot in the vicinity of Quetta. (123) *Gallinago coelestis*, the common Snipe. There is not much suitable ground for snipe near Quetta, but usually a few are about in the cold weather. The same remark applies to (124) *Gallinago gallinula*, the Jack Snipe. (125) *Gallinago solitaria*, the Himalayan solitary Snipe. This, I believe, has been procured near Quetta but never by me.

Family Laridæ.—(126) *Larus brunneicephalus*, the brown headed Gull. I saw large flocks of this gull on Khushdil Khán in March.

Family Pelecanidæ.—*Pelecanus onocrotalus*, the white Pelican. I saw large numbers of these birds flying over Bábar Kach going north in February. A native brought me one in, he had shot out of a flock with a bullet. It was just over 6 feet long.

Family Ardeidæ.—My observations of this group are by no means complete. There are only about two large pieces of water near Quetta, about 40 miles away: and these I have only visited for a few days in the cold weather. I have no doubt that many other species than the few I have noticed frequent these places at other times of the year. (127) *Ardea cinerea*, the common Heron. This is a cold weather visitor, not very common near Quetta, numerous at Khushdil Khán. (128) *Herodias alba*, the large Egret. I saw a good many of these birds at Khushdil Khán in the cold weather; I have also seen one or two flying over near Quetta.

Family Phoenicopteridæ.—(129) *Phoenicopterus roseus*, the common Flamingo. I once saw a very large flock of these birds, which must have numbered many hundreds, at Khushdil Khán in March.

Family Anatidæ.—This comprises the ducks and geese, of which a fairly large variety visits the District. The two tanks in Pishín, which are both open and have very little cover, contain many varieties, in winter, more perhaps than in any place in which I have shot in India. In 3 days' shoot in February, 12 different species were bagged.

(130) *Anser ferus*, the grey lag Goose. I shot two of these birds at Bábar Kach in February; I have no doubt they visit Khushdil Khán occasionally, but I did not happen to meet with any. (131) *Tadorna cornuta*, the Sheldrake. I saw two of these handsome ducks on Khushdil in March, but did not get one. They cannot ever be mistaken for any other species, at any rate on the water, the white in the plumage being very conspicuous. (132) *Casarca rutila*, the ruddy Sheldrake. This, the well known Brahminy duck, is not common, there were a few of them at Khushdil Khán in February. (133) *Anas boscas*, the Mallard. A fair number at Khushdil in February, but not so common as in many other places in Northern India. Out of a bag of 110 in February, 17 were Mallard. (134) *Chaulelasmus streperus*, the Gadwall. Rather rare; always a few about but certainly not common. This is a duck of plain colours chiefly brown, white, black, and with some chestnut in the wing. The upper breast in the male has a number of very well marked brown, crescent-shaped bars on the white, by which it can usually be identified. (135) *Nettium crecca*, the common Teal. This little duck is fairly common: out of the bag of 110 referred to above, 20 were teal. (136) *Dafila acuta*, the Pintail. Rather scarce, at any rate in February: there were always some small parties, but not many. (137) *Spatula clypeata*, the Shoveller. Much the same with regard to numbers as the last; always to be seen. This bird requires no description, as it can always be recognised by its extremely broad and ugly bill. (138) *Marmaronetta angustirostris*, the marbled Duck. Rare; only 2 or 3 were seen. This is a small duck, smaller than a gadwall; both sexes are alike, general colour lightish brown, each feather marked darker, and again each feather has a lightish tip, thus giving the plumage a curious mottled appearance, hence its name. (139) *Netta rufina*, the red-crested

Pochard. This occurs in very large flocks, but gets very wary, after a little gunning; it is one of the most common ducks on Khushdil. With his bright buff head and neck, and black under parts he presents a very conspicuous appearance, and can hardly be mistaken for any other species either swimming or flying. His bright vermilion bill, and red legs also serve to identify him. At Khushdil in February they were practically uneatable. (140) *Nyroca ferina*, the Pochard. This is the ordinary pochard or dun bird of Europe, and is, certainly in February, by far the commonest duck on Khushdil. Nor are they anything like as wary as most of the others, most of them not liking to leave the place, like the red-crested ones do. Out of our bag of 110, 41 were ordinary pochards. (141) *Nyroca ferruginea*, the white eyed Duck. This little duck is rather rare. It can always be identified by its white eye: it must however be remembered that it is only in adults that the iris is perfectly white; in young birds it is yellowish. In the air they appear half black and half white. Both sexes are coloured much alike. (142) *Nyroca fuligula*, the tufted Duck. In February there were very few of these birds, but on another occasion when I visited this tank in March, they were present in very large numbers. It is a small duck with dark black head; the breast and all the upper parts, head and neck, are slightly glossed with green; a long crest from the top of the head is glossed with purple. Underneath, from the breast, it is chiefly white; the female is much browner. It is a very fine diver. (143) *Erismatura leucocephala*, the white headed Duck. This, I think, is more commonly known as the stiff tailed Duck and is an ugly squat-shaped bird, with a curious bill much swollen at the base of the upper mandible, and of a pale blue colour. Its chief characteristic, however, is the tail, which consists of 18 very narrow stiff pointed feathers. When I was at Khushdil, there was a small flock of about 6 of these birds. I shot two with great difficulty. They do not fly much, but are very rapid swimmers and good divers. (144) *Mergus albellus*, the Smew. Fairly common, a fast flier and, as such, perhaps, worth a shot but useless to eat.

Family Podicipedidæ.—*Podicipes cristatus.* I saw what I believe to be these birds on Khushdil in February in small numbers. Also (145) *Podicipes albipennis*, the Indian Dabchick. The latter are common.

Appendix III.

Note on the Insect fauna of Baluchistan, by Major C. J. Nurse, 113th Infantry.

The following remarks refer exclusively to the insects found near Quetta and Pishín, where the writer has had opportunities for collection and observation.

Among the Orthoptera, two species of locusts are the most conspicuous, and do considerable damage. One of these, *Schistocerca peregrina*, frequently called *Acridium peregrinum*, is very widely spread. The other species is probably *Pachytylus cinerascens*. During the present year (1903) the former species appeared in large numbers in March, but a spell of cold weather killed most of them off.

Many species of Neuroptera are common, especially dragonflies. These insects serve a most useful purpose in killing large numbers of flies and mosquitoes. I believe that the larvæ of dragonflies also destroy mosquito larvæ. During the present year (1903) enormous swarms of a large species of dragonfly appeared in June and July, and to their presence I attribute the comparative scarcity of mosquitoes. *Termitidae* (white ants) are also numerous, and do some damage, but less than at most places in India. *Myrmeleonides* (Ant-lions) are not uncommon, and one very large species occurs. Among the lesser known Neuroptera, a species of *Embia* is found, and I received some years ago from Pishín a species of *Nemoptera*, which is a very remarkable looking insect.

Hymenoptera (Bees, Wasps, etc.) are very numerous, and as my attention has been chiefly devoted to this family, I will give a somewhat longer account of those that occur in Baluchistán. Situated as the country is, on the border of the Palaearctic and Oriental regions, the species that occur here comprise many Indian and European species. There is also some resemblance between the Hymenopterous fauna of Kashmír and that of Baluchistán. As may be expected, many of the species that occur here have been found in Russian Central Asia, and have been described by Russian naturalists. Sawflies I have not found; they are usually numerous only in well wooded country. The *Parasitica* are not common: I obtained a species of *Leucopsis*, one or two *Braconidae*, a species of *Evania*, besides several *Ichneumonidae*. The latter are, however, less numerous than might be expected. *Chrysididae* (Ruby or Cuckoo wasps), are common, and numerous species occur. I obtained examples, many of which were hitherto undescribed, of the following genera: *Ellampus*, *Hedychridium*, *Hedychrum*, *Stilbum*, and *Chrysis*. The latter is a large genus, and many species occur. All the species of this family are parasitic on other Hymenoptera, and the more conspicuous species, such as *Stilbum splendidum* and *Chrysis orientalis*, may frequently be observed in verandahs, seeking for the nests of their victims, in which they deposit their ova.

The Apidae are numerous, both in species and individuals, but I have never come across a specimen of the true honey bee (*Apis*), though three species occur in India. As soon as the fruit trees come into blossom in the spring, they are surrounded by crowds of bees, chiefly belonging to the genus *Tetralonia*, but *Osmia* and *Andrena* are also represented. Later on in the summer, in addition to the above genera, the following occur:—among the short-tongued bees, *Colletes* and *Prosopis*; and among the long-tongued bees, *Sphecodes*, *Halictus* (many

species), *Panurgus*, *Nomia*, *Nomáda*, *Megachile* (many species), *Anthidium*, *Parevaspis*, *Ceratina*, *Coelioxys*, *Crocisa*, *Anthophora* (many species), and one species of *Xylocopa*. The latter is crepuscular in its habits, frequenting hollyhocks, and its larva feeds on the wood of willow and possibly other trees, usually I believe attacking those that are dead or dying. Specimens of two genera, *Ctenoapis* and *Melanapis*, which have hitherto not been found outside the Punjab and Baluchistán, also occur, the former being very common. Among the Diploptera, or Wasps, several species of each of the following genera are found: *Eumenes*, *Odynerus*, *Polistes* and *Vespa*. The largest species, *Vespa orientalis*, which is brown with a yellow band across the abdomen, frequently nests in the roofs of houses. Several of the common European wasps of the same genus are also found in some numbers. The Fossores, or digging wasps, are well represented. Among these are found the following genera: *Apterogyna*, *Mutilla*, and *Iswarra*, all having apterous females; none of them are common here, though occasionally the males come to light at night. Coming to the *Scoliidae*, another tribe of Fossores, two species of *Meria* are common, though the females are seldom seen; *Scolia* is represented by several species, two of which are large conspicuous insects, which are spread throughout the whole of Europe and Central Asia. Two or more species of *Elis* also occur, and one of *Sapyga*, the latter genus not having been found elsewhere in Indian limits.

Another tribe of Fossores, the *Ceropalidae*, till recently called the *Pompilidae*, is represented by a few large, and many medium-sized and small species. As, however, entomologists have not settled definitely the generic division of this tribe, I will not attempt to enumerate the genera which are found in Baluchistán. The largest species found here, and also perhaps the commonest, is *Salius nicevillei*. A further tribe of Fossores, the *Sphegidae*, comprises some of the largest and also some of the smallest of existing wasps. Representatives of the following genera occur within our limits: *Tachytes*, *Tachysphex*, *Larra*, *Homogambrus*, *Notogonia*, *Liris*, *Palarus*, *Miscophus*, *Gastrosericus*, *Pison*, *Trypoxylon*, *Ammophila*, *Sceliphron*, *Sphex*, *Pemphredon*, *Passaloecus*, *Diodontus*, *Gorytes*, *Stizus*, *Bembex*, *Philanthus*, *Cerceris*, *Oxybelus*, and *Crabro*.

The Formicidae, or Ants, are numerous in individuals, but not so in species. The largest and most conspicuous ant, frequently found in and about houses, is *Myrmecocystus setipes*, which occurs commonly in the Punjab.

Coleoptera (Beetles) are numerous, the most noticeable being various species of *Scarabaeus*, which act the part of scavengers by breaking up and burying the droppings of cattle and other animals, in which they lay their eggs. Several species of *Cicindelidae* (Tiger-beetles) are also common. The willow, poplar, and other trees are much subject to the depredations of some large species of beetles, but I am not certain to what genera these belong.*

Of the Lepidoptera (Butterflies and Moths), the former are not very numerous, at least in the immediate neighbourhood of Quetta. Perhaps the most common is the almost ubiquitous Painted Lady (*Pyrameis cardui*). The following are the other butterflies which commonly occur near Quetta:—*Ganoris sp.*, *Belenois mesentina*, *Limnas chrysippus*, *Synchloe daplidice*, *Colias sp.*, *Teracolus faustus*, *Hipparchia parisatis* and *H. thelephassa*, *Polyommatus boeticus*, *Aphnaeus hypargyrus*, *Chrysophanus phlœas*, *Azanus ubaldus*, *Zizera karsandra*, *Lycaena balucha*, *L. persica*, *L. hylas*, and *L. bracteata*, with perhaps a few more *Lycaenidae*.

The moths include *Deilephila livornica*, a species of *Macroglossa*, a *Catocala*, *Tarache sulphuralis*, one or two species of *Plusia*, and many others.

* This subject was investigated in 1905 by Mr. E. P. Stebbing, Forest Entomologist to the Government of India.—Ed.

Diptera or flies, which include of course gnats and mosquitoes, are very numerous. Some of them, especially the predatory *Asilidae*, are of very large size, and prey upon other insects. A species of this latter genus which occurs commonly at Quetta is about 1¼ inches in length, and is most voracious, preying upon butterflies, moths, and other insects, sometimes seizing those which are twice its own size and weight. *Culicidae* (gnats and mosquitoes) are fairly numerous during the summer, a few certainly passing the winter in houses in a state of hybernation. The genus *Anopheles* has attained an unenviable notoriety during the last few years as being the intermediate host of the malarial parasite. Several species of this genus doubtless occur here; last year (1902) individuals were not numerous, owing to the prevailing drought, and during the present year I attribute their comparative scarcity, as before mentioned, to the unusual number of dragonflies. *Simuliidae* (sand-flies) are very common, and few escape their irritating attentions. Blood sucking flies, also frequently called gad-flies, are very numerous at times, and are especially annoying to horses and camels, the females biting them to such an extent as frequently to cause considerable swellings on the abdomen. I have seen several horses during the present year, including one of my own, which were quite unfit for work owing to their bites.

The Oestridae (Bot-flies), are not very frequently seen in the imago stage, but some species are certainly numerous, among them *Cephalomyia maculata*, the larva of which comes to maturity in the camel's nostril, causing great irritation. A species of Hippobosca is also common, attacking both horses and dogs.

Among the lesser known classes of insects may be included the Hemiptera (Bugs), of which a considerable number of various species occur, among them being of course *Cimex lectularius*, so noxious to the human race. *Cicadas*, a species of which appeared in enormous numbers during the present year, are part of this family: the noisy song of the males cannot fail to attract attention. This group is of interest, as the larva frequently takes many years to develop, the perfect insect appearing sometimes at intervals of 13 and even 17 years. These insects did some damage to trees during this year, being present in millions; many kinds of birds may have been observed preying on them. *Aphidae*, frequently called plant-lice, do great damage to many fruit trees, and I believe that the galls, which so disfigure many of the poplar trees in and near Quetta are the work of an insect of this group.

The above is, of course, only a rough outline of the numerous insects which are found near Quetta. In the present state of our knowledge of entomology it is impossible to give anything like a complete list of the insect fauna of any portion of the Indian Empire.

Appendix IV.

Alphabetical list of the principal agricultural, revenue and shepherds' terms.

Term in Pashtú.	Explanation.
1. Abi (Quetta)* ...	Irrigated land. See *bindíwa* also *avi*, Nos. 41 and 18 below.
2. Abjosh	The dry raisins made from the *haita* grape.
3. Adám (Toba) ...	Fields along slopes of hills. See *andám*, No. 11 below.
4. Adígar	Village artizan.
5. Adígari	Wages in kind paid to an artizan.
6. Alor	The refuse of the fodder after it has been eaten by cattle. See also *kangar*, No. 134 below.
7. Alwoi or Aloi ...	Half ripe corn. Also corn parched in fire.
8. Ambár	Manure; also granary.
9. Ambárchi (Chaman)	A servant engaged to watch the *ambár* or granaries.
10. Ambár Khána (Pishín).	Granary.
11. Andám	Fields along slopes of hills. See also *adám*, No. 3 *supra*.
12. Andám Kawal (Pishín, Chaman).	The irrigation of hill side fields by means of series of small openings in a water channel. In Quetta it means to smooth the ground.
13. Angúri Bágh ...	Vineyard.
14. Aqúq	Unripe fruit especially apricots. See also *tarnak* and *pukai*, Nos. 342 and 257 below.
15. Asíwán or Aséwán	Miller.
16. Ashar	Borrowed labour for agricultural purposes.
17. Ashar Bánrae ...	Labourers obtained under the *ashar* system.

* Where a word is peculiar to a particular locality the latter is shown in brackets.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—(*contd.*).

Term in Pashtú.	Explanation.
18. Avi	Irrigated land. See also *ábi*, No. 1 *supra* and *bindwa*, No. 41 below.
19. Bachak	The second crop of maize, which does not ripen.
20. Bádár	Land owner (as distinguished from *bazgar*), No. 34 below.
21. Bádi Kawal ...	To winnow the grain with *chár shákha*. See also *duráwal*, No. 74 below.
22. Bád Mála	Ears of wheat withered by wind.
23. Badriza	Leather-covered rope, with which the lower part of the aperture in the yoke is secured.
24. Bágh	Garden.
25. Baghali	A side channel to lead off water from a *káréz* well, which has been blocked.
26. Bághcha	Small garden.
27. Band	Embankment. See *lath* and *pula*, Nos. 190 and 258 below.
28. Bandobast	Settlement.
29. Bára	Stone embankments or walls made to protect fields from encroachment by hill torrents.
30. Brazar	To bring home sheep and goats in the morning to be milked.
31. Bashakál	Rainy season.
32. Baskhulae (Hanna)	Maize flowers. See also *char khulae* and *kats khulae*, Nos. 52 and 145 below.
33. Batái	Division of crops.
34. Bazgar	Tenant (as distinguished from *bádár*, No. 20 *supra*).
35. Bébozh (Kákars) ...	Crops sown late. See also *tandae*, No. 339 below.
36. Bédah (Chaman) ...	Bundles of millet stalks.
37. Bégár	Forced labour.
38. Békh-josh	Off-shoots of a tree.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
39. Béla (Quetta) ...	An earthwork dam thrown across a stream. See *wand*, No. 380 below.
40. Béta (Chaman) ...	Open grounds, where flocks are kept for the night.
41. Bináwa (Pishín and Toba).	Irrigated land. See also *ábi* and *ávi*, Nos. 1 and 18 *supra*.
42. Bogarae	A piece of land given to a tenant or *mullá* free of rent for cultivation.
43. Bohál	Rent paid in kind by a tenant to landlord.
44. Bohalla	Short showers of rain during spring.
45. Bráimjo	Open *káréz* channel.
46. Buchar (Kákars) ...	Ears of maize, from which the grain has been extracted.
47. Bútak	Green wheat crop damaged by cold about end of March.
48. But-ba (Chaman) ...	A labourer engaged to cut and bring fuel.
49. Chakkanak (Pishín)	A flock composed of sheep and goats belonging to several.
50. Chao (Chaman) ...	Open water channel.
51. Charai. Br.*(Quetta)	Trench between ridges in a melon field. See *jóá*, No. 121 below.
52. Char-khulae ...	Maize flowers. *Kats khulae*, No. 145 below and *baskhulae*, No. 32 *supra*.
53. Chér	Cleaning water channels in spring.
54. Chin	A single plucking of *páléz* produce.
55. China	A spring. See also *chishma*, No. 57 below.
56. Chinjan or Chimjan	Affected by *chinjai* insects—Thus *chinjan khatakae*, a melon affected by insects.
57. Chishma	A spring. See also *china*, No. 55 *supra*.
58. Chodakki (Chaman)	Ears of maize, from which corn has been extracted. See also *mutkárae* and *dandar*, Nos. 220 and 65 below.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
59. Chond (Quetta) ...	Short lucerne plants grazed by cattle. See also *kurund*, No. 177 below.
60. Dab	Stagnant water.
61. Dad (Chaman) ...	Wheat or barley, when knots have appeared in the stalks.
62. Dagárai (Quetta) ...	Hard soil, with which stones are mixed; unfit for cultivation.
63. Dam	Water running slowly owing to a block in a *káréz*.
64. Dána Bandi ...	Appraisement of crop for fixing Government demand in kind. Used specially for grain crops. See also *tashkhis*, No. 344 below.
65. Dandar (Pishín) ...	Ears of maize, from which the grain has been extracted. See also *chodakki*, No. 58 *supra* and *mutkárae*, No. 220 below.
66. Dandi-páléz ...	*Páléz* sown in a plot of land, in which rain water has been collected.
67. Darwazh ...	A cut made by flock-owners in kids' ears to serve as a distinguishing mark. Also a sheep or goat set apart for sacrifice at a shrine.
68. Déma Ghanam (Chaman).	Late wheat. See also *Sra ghanam*, No. 326 below.
69. Dénro ...	A milch sheep or goat given on loan. See also *lwaghzi*, No. 200 below.
70. Doa Halíza (Quetta)	Second ploughing.
71. Doáwa (Toba) ...	Second watering of fields.
72. Dramand (Pishín)...	A heap of threshed crop before grain is separated. See also *durmand*, No. 76 below.
73. Dukál	Drought, also famine. See also *kákhti*, No. 130 below.
74. Duráwal (Chaman)	To winnow. See also *bádi kawal*, No. 21 *supra*.
75. Durba	Rainy days in winter.
76. Durmand	A heap of threshed crop before grain is separated. See also *dramand*, No. 72 *supra*.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
77. Durmand-záé ...	Threshing floor.
78. Gagra	A menial, who assists in cleaning the threshing floor.
79. Galai	Tunnel connecting wells of a *káréz*.
80. Ganda darao ...	First crop of lucerne.
81. Gardawo (Chaman)	A quantity (generally one *kása*) of grain given annually by each family to the blacksmith.
82. Gáshwán	A crop-watcher. See also *walári tohae* and *sozwán*, Nos. 379 and 320 below.
83. Gawanda or Gonda	A bullock sack.
84. Gazára	Chaff.
85. Gédai	Half ripe corn ; also bunches of ears of corn.
86. Gham	Government revenue demand.
87. Ghamdeh, Ghamkash.	Revenue paying land.
88. Gham-i-naukar ...	Men-at-arms supplied under Afghán rule in lieu of land revenue.
89. Ghaocha	Holes made close to the roots of fruit trees or melon plants for manure.
90. Gharak	A skin used for churning milk.
91. Ghat fasal (Toba) ...	The principal or spring harvest.
92. Ghéli (Chaman) ...	A small number of sheep.
93. Ghichae	Sods of turf.
94. Ghoba	Cow-herd.
95. Ghobal	To thresh.
96. Ghojil	Place in a house or tent set apart for bullocks.
97. Gholba	A plot of land, which can be ploughed by a pair of oxen in 12 hours. See *jora*, No. 123 below.
98. Ghora	Unripe grapes.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—(*contd.*).

Term in Pashtú.	Explanation.
99. Ghozah	Ear of maize.
100. Ghúndae	A large bullock sack.
101. Ghunj	Ditto.
102. Ghutai	Buds.
103. Ghwa	Cow.
104. Ghwayae	Bullock.
105. Gol Largae... ...	The pole in the centre of the threshing floor, around which bullocks revolve.
106. Grift or Graut ...	A handful of cut crop.
107. Gul	The state of a crop when flowers have appeared.
108. Gul Gíri Kawal ...	Picking of superfluous flowers from melon plants.
109. Gumána	The head or trial well of a *káréz*. See also *kurkae*, No. 175 below.
110. Hadúkae (Quetta)...	Apricot stones. See *mandaka*, No. 208 below.
111. Haq-i-Malkána ...	Remuneration paid to a village headman for collecting Government demand, usually 5 per cent.
112. Hatsk (Chaman) ...	A holding. See also *taurae*, No. 340 below.
113. Haud	A tank, in which *kárér* water is collected.
114. Haud Kae	Smaller tank.
115. Héra	A plot larger than a *kurd*, No. 174 below.
116. Ijára	Lump assessment.
117. Jalatta (Chaman)...	An earthen receptacle covered with mats used for storing grain.
118. Jambast	Fixed cash assessment.
119. Jaríb	Survey.
120. Járkrúnae	The first *kása* (measure) taken out of a heap of grain when measuring it and given to the *mullá*.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
121. Joá	Trench between ridges in melon fields. See *chara*, No. 51 *supra*.
122. Jongae	A camel calf.
123. Jora	A plot of land, which can be ploughed by a pair of oxen in 12 hours, also a pair of plough oxen. See *gholba*, No. 97 *supra*.
124. Jowaki	Melon cultivation growing in trenches or on ridges, also vine.
125. Jurang	Melon plants ; any creeping plant.
126. Jwál	A sack.
127. Kad-hal (Chaman)	A structure, built of stone-in-mud for storing grain.
128. Kaftarak Kawal ...	To sprinkle manure with the hand in vegetable fields.
129. Káhdána	An earthen structure for storing *bhúsa*, also a pit covered over with earth, in which *bhúsa* is stored.
130. Kákhti (Chaman) ...	Scarcity. See also *dukál*, No. 73 *supra*.
131. Kákul (Chaman) ...	Maize flowers.
132. Kandak	A flock of sheep. See also *park*, No. 243 below.
133. Kandú (Chaman) ...	Earthen receptacle for storing grain. See also *kohlai*, No. 170 below.
134. Kangar (Pishín) ...	The refuse of the fodder after it has been eaten by cattle. See also *alor*, No. 6 *supra*.
135. Kankút (Pishín) ...	Crop cut for making crop experiments.
136. Kanta (Quetta) ...	Ditto.
137. Kaoda	A bundle of crop cut.
138. Kara	Sowing melons by hand in a line made with the plough. See *táki*, No. 338 below.
139. Karaba	Maize stalks.
140. Káréz	Underground water channel.
141. Karhanra	Cultivation.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd).*

Term in Pashtú.	Explanation.
142. Kárígar	An artizan especially a *kárēz* digger. In Quetta a bullock (Br: and B).
143. Karwanda	Cultivable land lying fallow.
144. Kats	A plot of cultivable land in the bed of a stream.
145. Kats Khulae. (Kákars).	Same as *char khulae*, No. 52 *supra.*
146. Kattae	Mung chaff.
147. Kér	Sheep-pen.
148. Khák Bél Warkawal.	Putting dry earth at the foot of the melon plants.
149. Khar Balg	Large leaves of vines, which are considered injurious to the growth.
150. Kharkáwa	First watering of a crop.
151. Khar Khul ...	A pair of shears.
152. Khar-lao	Pruning the hard branches of vines to strengthen the young ones.
153. Khasíl	Green wheat and barley crop cut for fodder. See *khíd*, No. 157 below.
154. Khat Kashi ...	A custom, by which a man sinks a new *kárēz* in another man's land on condition of getting a share, generally half, in the proprietorship both of land and water, the proprietor of the land keeping the other half.
155. Khawandi Mzakka	Land held individually not jointly.
156. Khazán Angúr ...	Over ripened grapes.
157. Khíd (Quetta, Br.)	Green wheat or barley cut for fodder. See also *khasíl*, No. 153 *supra.*
158. Khula Band (Quetta).	Wells of a *kárēz*, the tops of which are covered. See also *khula sarposh*, No. 160 below.
159. Khula Khwand (Chaman).	The tip given to a miller in addition to his wages for grinding corn.
160. Khula Sarposh (Pishín).	Wells of a *kárēz*, the tops of which are covered. See also *khula band*, No. 158 *supra.*

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
161. Khush Bar (Quetta and Pishín).	The *rabi* or spring crop.
162. Khushdarao ...	All cuttings of the lucerne crop except the first called *ganda darao* and the last called *chond*. See also *shakar darao*, No. 300 below.
163. Kushka Prékawal...	To prune vines.
164. Khushkáwa ...	Dry crop. See *wachobi*, No. 374 below.
165. Khwa (Chaman) ...	To clear land of shrubs etc.
166. Khwara	Fixed contribution paid to a *mullá*, Saiad or shrine.
167. Kila (Quetta) ...	An association of more than two ploughs cultivating in common.
168. Kisht	Cultivation.
169. Kishtgar (Toba and Pishín)	A tenant who provides half the seed, bullocks and labour and gets one-third to one-half of the produce.
170. Kohlai	Earthen receptacle for storing grain. See also *kandu*, No. 133 *supra*.
171. Khoshkak	A dam made of brushwood in a stream to lead off water.
172. Kotán (Chaman) ...	A small pen in which kids are kept.
173. Krutkánri (Quetta)	A kind of soft soil, in which white stones are mixed.
174. Kurd	Small bed or plot in a field.
175. Kurkae	The trial well of a *káréz*. See also *gumána*, No. 109 *supra*.
176. Kursai (Quetta) ...	A shepherd's hut.
177. Kurund (Pishín) ...	Short lucerne plants grazed by cattle. See also *chond*, No. 59 *supra*.
178. Kwarra (Pishín and Chaman).	Small heaps of grain made at the time of *batái*.
179. Kwatta (Quetta) ...	Ditto.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
180. Lagh Kawal ...	Plucking the superfluous leaves of vines.
181. Láígar	Reaper. See also *lau garrae*, No. 192 below.
182. Laikashi	Cleaning of a *káréz*.
183. Lalúnae Kawal ...	Weeding, also to clear land of shrubs, etc.
184. Lambúr	Tunnel between the wells of a *káréz*.
185. Langa Ghwa ...	Milch cow.
186. Lao	Harvesting.
187. Laré Kulmé (Quetta)	(Offal). Threshing floor sweepings, in which grain is mixed given to the *gagra*.
188. Lásh	Melon field or orchard, from which all fruit has been picked.
189. Lashtae	A small irrigation channel.
190. Lath	Embankment. See also *band*, No. 27 *supra*, and *púla*, No. 258 below.
191. Lathband(Quetta)...	The man who first constructs the *lath* round a field, and thus acquires a right of occupancy.
192. Lau Garrae (Chaman)	Reaper. See also *láígar*, No. 181 *supra*.
193. Lawae	Reaper. See also *lau garrae*, No. 192 *supra*.
194. Lawai	Wages paid to the reapers.
195. Lékha	A fixed rent in kind or cash, paid by the tenant to the landlord.
196. Lérba	A shepherd who tends young kids.
197. Loazhaghae ...	Wages, consisting of food, a quantity of wool and cash given to a shepherd during the season when sheep and goats are dry.
198. Lora	A hill torrent carrying flood water.
199. Lwagh (Chaman and Pishín).	To milk. See also *lwasal*, No. 201 below.
200. Lwaghzi or Lwaghzungi (Pishín).	A milch sheep or goat given on loan. See also *dénro*, No. 69 *supra*.
201. Lwasal (Quetta) ...	To milk. See also *lwagh*, No. 199 *supra*.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
202. Máfi	Revenue free holding.
203. Mahsúl	The Government revenue in cash or kind. See also *gham*, No. 86 *supra*.
204. Máldágh	Cattle tax.
205. Maliki	Payment formerly made to headmen or *maliks* or land exempted from revenue for collecting Government demands.
206. Mámatta	A field close to a village enclosed in walls.
207. Mandak	Young melons called *mora* by the Kandaháris.
208. Mandaka (Píshín) ...	Apricot stones. See also *hadúkae*, No. 110 *supra*.
209. Marai (Toba Kákari)	Unripe melon. See also *shinkae*, No. 307 below.
210. Mattana Mzakka ...	Soil, which contains silt or *mat*.
211. Mazh	Ram.
212. Mézha	Sheep.
213. Mián Kharts ...	A portion of grain set aside out of the main heap for the wages of artizans and village expenses. See also *sarkoi*, No. 285 below.
214. Mírás (Quetta) ...	Ancestral land. See also *mírási mzakka*, No. 215 below.
215. Mírási Mzakka (Píshín).	Ditto. See also *mírás*, No. 214 *supra*.
216. Míráw (Pers. Míráb)	A village official appointed by the villagers to superintend the division of water and the maintenance of water channels.
217. Mora	Bundle of dry lucerne.
218. Mulk	Property in land.
219. Mushraff	An official care-taker for crops.
220. Mutkárae (Kákars)	Ears of maize, from which the grain has been extracted. See also *chodakki* and *dandar*, Nos. 58 and 65 *supra*.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
221. Muz or Muzd (Pishín and Chaman)	Wages, especially wages paid for grinding corn. See also *shágirdána*, No. 298 below.
222. Nágha	Second seed sown in a melon field to replace such as have failed. Also seed that has failed.
223. Naghurra (Chaman)	Ears of maize.
224. Ná Khunáo ...	First watering of *pálézát*.
225. Náli. Br. (Quetta)...	A drill. Drilling.
226. Nár	Land cleared of its crop.
227. Nárai	Wheat or barley stubble. See *palála*, No. 238 below.
228. Náwa	First watering before land is ploughed.
229. Náwar (Pishín) ...	A hollow or pit, in which drinking water stored.
230. Nézakae (Chaman)...	A wedge in the plough.
231. Nihál	Young trees.
232. Nihál Khána ...	Nursery garden. See also *zakhíra*, No. 398 below.
233. Núz	A flood. See also *séláo* and *sél*, Nos. 295 and 294 below.
234. Obo Khwar ..	The place for watering flocks.
235. Ola	A flock of kids.
236. Paiwand	Grafting
237. Pakhé Oba	Perennial water. See *toré-oba*, No. 354 below.
238. Palála (Br). ...	Wheat or barley stubble. See *nárai*, No. 227 *supra*.
239. Páléz	Generic term for cucurbitaceous crops. Also the beds, in which they are cultivated.
240. Pálézwán or Pálézkár.	A cultivator of cucurbitaceous crops.
241. Panerae	Seedlings.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
242. Parghat (Quetta) ...	Second threshing as distinguished from *ghobal*, No. 95 *supra*. See also *sparkhae* and *surkh koi*, Nos. 322 and 331 below.
243. Park	A flock of sheep. See also *kandak*, No. 132 *supra*.
244. Paro	Cash wages paid to shepherd.
245. Páshaki	Sowing melons broad-cast among other crops.
246. Pasbát (Pishín) ...	Chaff scattered on the threshing floor, apart from the main heap. See also *séka*, No. [illegible] below.
247. Pasta Mzakka ...	Soft soil. See also *potae*, No. 252 below.
248. Patrae	Young green wheat and barley clinging to the ground. See *tikai*, No. 348 below.
249. Patwárae	Village accountant.
250. Péchak	Vine tendril; also a creeper that grows over vines.
251. Pézi	Withered (fruit).
252. Potae (Chaman) ...	Soft soil. See also *pasta mzakka*, No. 247 *supra*.
253. Pré Kawal	To pluck grapes.
254. Pror	Chopped straw (*bhúsa*).
255. Proti Tohae ...	A guard for the threshing floor.
256. Púji Kawal ...	Pruning of trees.
257. Pukai (Pishín) ...	Unripe fruit especially apricots. See also *tarnak*, No. 342 below and *aqúq*, No. 14 *supra*.
258. Púla (Pishín and Chaman).	Embankment. See also *lath* and *band*, Nos. 1[illegible] and 27 *supra*.
259. Puli Spára	Wheat or barley crop, in which some of the ears have appeared.
260. Punga	Buds of vines.
261. Push (Quetta and	Blacksmith. See also *ustákár*, No. 372 below.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE, AND SHEPHERDS' TERMS.—(*contd.*).

Term in Pashtú.	Explanation.
262. Pushta	Ground between two channels in melon fields.
263. Qalam	Cuttings.
264. Rágha	Land along the skirts of hill.
265. Rama	A flock of sheep as distinguished from *tawae*, a flock of goats.
266. Régai or Régana Mzakka	Sandy soil.
267. Riása or Riásha ...	Grain heap on the threshing floor.
268. Roína	Open *káréz* channel. See *bráímjo*, No. 45 *supra* and *sáp* No. 329 below.
269. Rozmána	Lambing season.
270. Saikra	The allowance at 5 per cent. paid to the headmen for collecting Government demand (*haq-i-malkána*, No. 111 *supra*)
271. Sailába	Flood irrigation.
272. Sama (Barshor) ...	First watering of a crop.
273. Sámáni	The main channel in a melon field or vineyard, from which smaller channels (*joá*) branch off.
274. Sámborae	A fattened sheep.
275. Sangchín	Lining a water channel with stones.
276. Sáp	Crop of wheat or barley, in which all the ears of corn have appeared.
277. Sára or Spín Ghanam	Early wheat as distinguished from *tauda ghanam* or late wheat.
278. Sarband	Seeds which do not germinate.
279. Sarchák	Open channel in the middle of a *káréz*.
280. Sar Drakht ...	All fruit trees except vines.
281. Sar Drakht Bágh ...	Orchard containing *sar drakht*.
282. Sar gala	Term formerly used for cattle tax by Afghán officials. See also *sar-i-rama*, No. 283 below.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—(*contd.*).

Term in Pashtú.	Explanation.
283. Sar-i-rama (Pishín).	Term formerly used for cattle tax by Afghán officials in Pishín. See also *sar gala*, No. 282 *supra*.
284. Sarkao	Cutting wheat or barley to strengthen the plants.
285. Sarkoi (Pishín) ...	A portion of grain set aside out of the main heap for wages to artisans and village expenses. See also *mián kharts*, No. 213 *supra*.
286. Sarputti	Wheat or barley, the ears of which have formed, but in which the corn is not visible.
287. Sarrah (Quetta) ...	Manure.
288. Sarsáya	A quantity of grain given annually by each family to the village *mullá*.
289. Sar-súba	The well in a *káréz* next to the *gumána*, No. 109 *supra*.
290. Sauz-bar	Kharíf or autumn harvest.
291. Sauz-chat	A disease peculiar to maize and lucerne.
292. Sawárataták	Vines on wooden poles or trees as distinguished from *jowaki* or vines grown in trenches.
293. Séka (Pishín) ...	Chaff scattered on the threshing floor apart from the main heap. See also *pasbát*, No. 246 *supra*.
294. Sél (Chaman) ...	Flood. See also *núz*, No. 233 *supra* and *séláo*, No. 295 below.
295. Séláo (Pishín) ..	A flood. See *núz* and *sél*, No. 233 and 294 *supra*.
296. Shafta	A disease of lucerne, melon and vine leaves.
297. Shagai, Shagana or Sagai Mzakka (Hanna and Toba).	Sandy soil containing gravel.
298. Shágirdána ...	Wages paid for grinding corn. See also *muz*, No. 221 *supra*.
299. Shagúpa. (Pers. Shagúfa).	Blossoms.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—(*contd.*).

Term in Pashtú.	Explanation.
300. Shakar Darao (Chaman).	All cuttings of the lucerne crop except the first called *ganda darao* and the last called *chond*. See also *khush-darao*, No. 162 *supra*.
301. Shakarpára ...	A species of apricot, the dried fruit of which is imported from Kandahár.
302. Shal (Pishín) ...	Water-divide. See also *tagír*, No. 333 below.
303. Sharana Mzakka ...	Salt land.
304. Sharíki Mzakka (Chaman).	Undivided or common land. See also *tumani mzakka*, No. 336 below.
305. Shawae (Chaman)...	Plots in fields.
306. Shéla	A small hill torrent.
307. Shinkae	Unripe melon. See also *marai*, No. 209 *supra*.
308. Shíra	Half formed grain.
309. Shom	First ploughing after harvest.
310. Shomgarae	Land ploughed after harvest.
311. Shoráwaki Ghanam.	Late wheat. See *sra*, *tauda*, Nos. 326, 345 below and *déma ghanam*, No. 68 *supra*.
312. Showán	To take flocks to graze in the night.
313. Shpalghalae (Quetta)	Sheep or goat pen.
314. Shpána	Shepherd.
315. Shpol	Sheep pen.
316. Shudiára (Pishín and Chaman).	First ploughing after harvest. See *shom*, No. 309 *supra*.
317. Skhundar	A calf.
318. Skwal	Shearing sheep and goat.
319. Skwalae	A shearer.
320. Sozwán (Pishín) ...	A crop watcher, same as *walári tohae*, No. 379 below and *gáshwán*, No. 82 *supra*.
321. Spandakh	A bundle of spun wool thread. See also *tsásha*, No. 362 below.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
322. Sparkhae (Pishín)...	Second threshing as distinguished from *ghobal* or first threshing. See also *parghat* No. 242 *supra* and *surkh-koi*, No. 331 below.
323. Spéd Bar (Pishín)...	*Rabi* or spring crop.
324. Spína Mzakka (Quetta).	Soft (white) soil.
325. Spín Sarri Mzakka	Land with moisture fit for sowing.
326. Sra Ghanam ...	Late wheat. See *shordwaki*, *déma*, Nos. 311 and 68 *supra* and *tauda ghanam*, No. 345 below.
327. Srae (Quetta) ...	A lucerne field.
328. Súba	A *káréz* well.
329. Súp (Chaman) ...	Open channel of a *káréz*, which has a few wells at the head. See also *róina*, No. 268 *supra*.
330. Surkhae	Rust.
331. Surkh-koi (Chaman)	Second threshing as distinguished from *ghobal* or first threshing. See also *parghat* and *spar khae*, Nos. 242 and 322 *supra*.
332. Súrsát	Supplies collected for Government officials.
333. Tagír	A water-divide or sluice. See also *shal*, No. 302 *supra*.
334. Ták	Vines. Any creeping crop.
335. Tak	A mark made on sheep by cutting a part of wool or applying coloured matter.
336. Tákburi	Pruning the vines.
337. Takhta	A division of a field, a plot.
338. Táki	Sowing melons by hand in a line made with the plough. See *kara*, No. 138 *supra*.
339. Tandae (Chaman)...	Crop sown late. See also *béboẓh*, No. 35 *supra*.
340. Tanrae (Barshor and Toba).	A holding. See also *hatsk*, No. 112 *supra*.
341. Tánte (Chaman) ...	Maize stalks.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
342. Tarnak (Quetta) ...	Unripe fruit especially apricots. See also *aqúq* and *pukai*, Nos. 14 and 257 *supra*.
343. Tarnáwa	Wooden aqueduct.
344. Tashkhís	Appraisement of standing crops, for fixing Government demand. See *dána bandi*, No. 64 *supra*.
345. Tauda Ghanam ...	Hot, i.e., late wheat. See also *sra* and *shorá-waki ghanam*, Nos. 326 and 311 *supra*.
346. Tawae	A flock of goats.
347. Télo	Weaning time.
348. Tikai	Young green wheat or barley crop clinging to the ground. See *patrae*, No. 248 *supra*.
349. Tilérae	A small plot of level ground among hills with a spring of water.
350. Tirai (Barshor) ...	A winding water channel for irrigating sloping fields.
351. Tobra	A horse's nose bag. A share of grain taken by horsemen from the *zamíndárs* at the time of *batái*.
352. Tohae	A crop-watcher.
353. Tora Mzakka (Quetta).	Black soil—the best kind of land in Quetta.
354. Toré Oba	Perennial water. See also *pakhé oba*, No. 237 *supra*.
355. Tsáh	Well.
356. Tsakawal (Chaman)	To give fodder to sheep while at home.
357. Tsakhobae	Small plot of cultivated land on hill side with a small quantity of permanent water.
358. Tsandal	To shake the fruit off a tree such as mulberry, apricot, apple, etc.
359. Tsapar	Weighted thorny hurdle used for threshing grain.
360. Tsarkhae	Spindle for wool spinning.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(contd.)*.

Term in Pashtú.	Explanation.
361. Tsárú	Lit: a spy. The first few plants, which appear in a field.
362. Tsásha (Chaman) ...	A bundle of wool. See also *spandakh*, No. 321 *supra*.
363. Tstae	A bundle of crop or a man's load given to an artisan or a *mullá*.
364. Tukhm	Seed.
365. Tukhm Lawastal, Tukhm Páshal.	Sowing seed broadcast.
366. Tumani Mzakka ...	Village or common land. See also *ulusi mzakka*, No. 367 below and *sharíki mzakka*, No. 304 *supra*.
367. Ulusi Mzakka (Pishín.)	Village or common land. See also *tumani* and *sharíki mzakka*, Nos. 367 and 304 *supra*.
368. Ush	Camel.
369. Usha	She-camel.
370. Ushba	Camel-herd.
371. Ush Kawal ...	To pluck melons.
372. Ustákár (Chaman)	Blacksmith. See also *push*, No. 261 *supra*.
373. Viála or Vála ...	Water channel.
374. Wachobi	Dry or rain cultivation. See also *khushkáwa*, No. 164 *supra*.
375. Wad	The commencement of harvest.
376. Wáh	Main water channel.
377. Wahri Oba ...	Springs and *kárezés*, in which water appears after rains only.
378. Walár Fasal ...	Standing crop.
379. Walári tohae ...	A crop watcher. See also *gáshwán* and *szwán*, Nos. 82 and 320 *supra*.
380. Wand (Pishín) ...	An earthwork dam in a stream. See *béla*, No. 39 *supra*.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—(*contd.*).

Term in Pashtú.	Explanation.
381. Wandar	A rope provided with nooses, to which sheep and goats are tethered.
382. Wánra	Heap of chaff on threshing floor.
383. Warai	Sheep or camel wool.
384. Warg	A full-grown sheep, male or female. A bundle of wool cut from a single sheep.
385. Warkh	A small embankment in the mouth of a water channel.
386. Wáshkae	A bunch of grapes. Also a rope.
387. Wazhae	Ear of corn, especially applied to wheat and barley.
388. Wazhae-chin (Quetta) or Wazhaechae (Pishín and Chaman).	A gleaner.
389. Wazhae Pagéda (Chaman and Pishín).	Wheat or barley, the ears of which have formed, but are not yet visible. See *sarputti*, No. 286 *supra*.
390. Wor Pasal (Toba) ...	Autumn or *kharif* crop.
391. Wurta	Spun wool.
392. Wuz	Full-grown he-goat.
393. Wuza	Full-grown she-goat.
394. Wuzburrae (Chaman)	Goat-hair cut from a single animal and made into a bundle.
395. Wuzghúni	Goat-hair.
396. Yívi Wahal ...	Ploughing.
397. Zágh	Wheat when quite clean.
398. Zakhíra	Nursery garden. See also *nihál khána*, No. 232 *supra*.
399. Zanri	Melon seed.
400. Zárae	Crop sown seasonably.

ALPHABETICAL LIST OF THE PRINCIPAL AGRICULTURAL, REVENUE AND SHEPHERDS' TERMS—*(concld.)*.

Term in Pashtú.	Explanation.
401. Zarai Kalang ...	A lump assessment in cash or kind, or both, formerly in vogue in parts of the Quetta tahsíl.
402. Zari Mzakka (Pishín)	Land acquired by purchase.
403. Zar Kharíd ...	Self acquired land, also divided land.
404. Zarzi	The yellowish ears of a crop, when ripe.
405. Zhaghzai (Pishín) ...	Wheat chaff.
406. Zhar Ghwazhae ...	Withered crop.
407. Zíam	Swampy ground.
408. Zolai	A lap full of grain, given at the time of *batái*, to the Khán's officials in pre-British days.
409. Zranda	Water mill.
410. Zúka	Any newly sprouting crop.
411. Zumbak (Chaman)...	The soft hairs on the ear of maize.

Appendix V.

Alphabetical list of agricultural implements.

Term in Pashtú.	Explanation.
1. Ara	A small sickle.
2. Chaj (Quetta) ...	Winnowing fan.
3. Chár-shákha ...	Four pronged fork for winnowing.
4. Chilomba	A sling generally used for driving birds away from crops.
5. Chughul	A sieve with larger holes than the ordinary sieve, called *ragh bél*, No 24 below.
6. Dal	Wooden spade worked by two men with a rope for making small embankments.
7. Dosliákha or Doa-khuli.	Two pronged fork.
8. Gháshae (Chaman)...	The shaft of the plough.
9. Hall	Plough.
10. Kahai	A hoe.
11. Káhkasha	A net for carrying *bhúsa* etc. See also *korae*, No. 14 below.
12. Kén (Quetta) ...	A plank harrow. See also *khál*, No. 13 below.
13. Khál (Pishin) ...	A plank harrow. See also *kén*, No. 12 *supra*.
14. Korae	A net for carrying *bhúsa* etc. See also *káhkasha*, No. 11 *supra*.
15. Kundah	Shoe of the plough.
16. Laké (Toba) ...	Plough handle. See *mutanak* and *niwakka*, Nos. 19 and 20 below.
17. Lor	Sickle.
18. Mála	A wooden log used as a clod crusher.
19. Mutanak	Handle of the plough. See *laké*, No. 16 *supra* and *niwakka*, No. 20 below.

ALPHABETICAL LIST OF AGRICULTURAL IMPLEMENTS.

Term in Pashtú.	Explanation.
20. Niwakka	Plough handle. See also *mutanak* and *laké*, Nos. 19 and 16 *supra*.
21. Palai (Chaman) ...	The iron shoe of the plough.
22. Pára...	A rake.
23. Pulak (Toba) ...	Iron nail, with which ploughshare is fastened.
24. Raghbél	Sieve. See *chughul*, No. 5 *supra*.
25. Rambae	A short spud.
26. Skanna	Grafting chisel.
27. Spára	Ploughshare.
28. Tabar	Axe.
29. Trapae	A wooden spade for winnowing grain.
30. Tsapanrai	A wedge in the plough.
31. Yúm	A spade.
32. Zagh	A yoke.
33 Zghwandae... ...	Wedges in the yoke.

Appendix VI.

Notification by the Hon'ble the Agent to the Governor-General in Baluchistan.

No. 5019, dated Quetta, the 29th October 1906.—In exercise of the powers conferred by section 4 (2) of the Cantonments Act, 1889 (XIII of 1889), and with the previous sanction of the Governor-General in Council the Hon'ble the Agent to the Governor-General in Baluchistan is pleased, in supersession of his notification No. 1103, dated the 8th March 1904, and all previous notifications on the subject, to define the limits of the Quetta Cantonment as follows:—

Description of the Boundary of the Quetta Cantonment.

Boundary pillar No. 1 is situated near the West side of the Bridge leading to the Military Works Brickfield on the Right Bank of the Nullah which runs in a westerly direction at the South end of Little Road.

Bearing to Right hand point of Murdar ...	136°
Bearing to Left hand point of Takatu ...	33° 40′
Bearing to Dome in Hindu Burning ground	138° 50′
Bearing to centre of pier of Bridge leading to Military Works Brickfield	100° 10′
Distance	118 feet.
Bearing to South-East Corner of compound to the East of Officer's Quarters No. 8...	353° 30′
Distance	84 feet.
Magnetic variation	3° 25′ East.

Pillar. From	Pillar. To	Description.	Magnetic Bearing.	Direct Horizontal distance in feet.
1	2	From pillar No. 1 the boundary runs in a South-Westerly direction along the right bank of the Nullah to pillar No. 2.	255° 10′ 0″	944′
2	3	From pillar No. 2 the boundary follows the right bank of the Quetta (or Habib) river in a West and North-Westerly direction to pillar No. 3 situated just North of the centre of the Gymkhana.	293° 0′ 0″	6,175′

Note.—Published in Gazette of India, Part II, dated 3rd November 1906, pages 1426–1428.

Pillar.		Description.	Magnetic Bearing.	[illegible]
From	To			
39	1	From pillar No. 39 the boundary following the right hand bank of the Nullah North of the Military Works Brickfield runs in a Westerly direction to pillar No. 1.	275° 30′ 0″	1,63[illegible]

Description of Boundary of the Hindu Burning ground situated within Cantonment Boundary, Quetta.

Burning ground Boundary pillar No. 1 is situated at the South-West Corner of the enclosure :—

Bearing to C. B. P. No. 36	117° 30′
Distance	93 feet.
Bearing to C. B. P. No. 35	273° 30′
Distance	195 feet.
Bearing to C. B. P. No. 31	134° 30′

Pillar.		Description.	Magnetic Bearing.	[illegible]
From	To			
1	2	From pillar No. 1 the boundary runs in an Easterly direction in a straight line to pillar No. 2.	78° 30′ 0″	[illegible]
2	3	From pillar No. 2, which is situated at the South-East corner of the enclosure, the boundary runs in a Northerly direction to pillar No. 3.	4° 0′ 0″	[illegible]
3	4	From pillar No. 3, which is situated near the North-East corner of the enclosure, the boundary runs in a Westerly direction in a straight line to pillar No. 4.	271° 0′ 0″	[illegible]
4	1	From pillar No. 4 the boundary runs in a Southerly direction in a straight line to pillar No. 1.	171° 40′ 0″	[illegible]